Chapter 3 Affected Environment, Environmental Consequences, and Mitigation

This chapter describes the current state of the resources in the project area and identifies the likely impacts of implementing the proposed project. In general, each subsection below will describe the present conditions, discuss the likely impacts of building the proposed project, and indicate what measures would be taken to mitigate those impacts.

3.1 CEQA and NEPA

Information in this chapter is presented to clarify the requirements of the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The proposed project could have an adverse impact on the environment, and must satisfy requirements of both laws, since both Caltrans and FHWA must make project decisions. A combined FEIR/EA has been prepared in accordance with CEQA and NEPA.

CEQA requires a determination of significant impact to be stated in the environmental document (EIR), and this information is presented throughout this chapter. Under Section 15382 of the CEQA Guidelines, "significant effect" is defined as "…a substantial, or potentially substantial adverse change in any of the physical conditions within the area affected by the project including land, air, water, mineral, flora, fauna, ambient noise, and objects of historic and aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant."

NEPA does not require a determination of significant effects in the environmental document. Under NEPA, the term significant is used to describe Section 4(f) resources (Department of Transportation Act), Section 106 properties (National Historic Preservation Act), and floodplain impacts (Executive Order 11988).

3.2 Hydrology, Water Quality, Storm Run-Off

The Federal Clean Water Act (CWA) of 1972 addresses issues regarding water pollution control and water quality protection. The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters

for their beneficial uses. The 1987 amendments of the CWA added section 402 (P), which states that storm water discharges are point source discharges under the National Pollution Discharge Elimination System (NPDES) program. In 1990, the U.S. EPA promulgated final regulations that establish the storm water permit requirements. The responsibility for administering the CWA lies with the U.S. Environmental Protection Agency (US EPA).

3.2.1 Affected Environment

The project study area is a linear corridor, which follows the existing SR 99 through the central and southeastern sections of Sutter County within the Sacramento Valley. The Sacramento Valley was historically a large riparian floodplain, which for the last two centuries has been altered to accommodate agriculture. The area now contains rice fields, grain fields, orchards, and other row crops. The majority of the highway drainage is confined by the row crops and their drainage ditches.

Additionally, the project is located in the Central Valley Region (Region V) of the California Regional Water Quality Control Board (RWQCB). It occurs within the Central Valley Basin Plan which lists many beneficial uses for streams and springs in the vicinity of the project including municipal, agricultural, industrial, recreation, warm and cold freshwater habitat, migration, spawning and wildlife habitat and navigation. The Porter-Cologne Water Quality Control Act of 1969 requires that each RWQCB within the state formulate and adopt water quality control plans and basin plans for all areas in the region. The Clean Water Act as amended in 1972 imposes similar requirements.

The project areas lies in a Mediterranean subtropical climate zone; its cool wet winters and hot, dry summers are typical of areas in California Central Valley. Annual precipitation is approximately 53 centimeters (21 inches) with the majority of rainfall occurring between November and April. The elevation of project areas ranges from approximately 7.6 m - 13.7 m (25-45 ft) above sea level. Surface drainage in the project area is generally conveyed to agricultural drainage ditches that follow property lines and is eventually drained into the Feather River system.

There are a number of major waterways that lie within the project area including Buckham Slough, Coon Creek, and Ping Slough. The second, middle segment of the project includes the Feather River and Nelson Slough, which are contained within large flood control levees. The Northern segment (segment 4) of the project area is limited to manmade canals used for irrigation and the conveyance of storm water.

Aquatic Environment

The aquatic environment contains jurisdictional Waters of the U.S. and wetlands that are described in detail within the Wetlands and Waters of the U.S. section of this environmental document.

Wetlands and riparian environments are known to provide improvements to water quality through the removal of sediments and nutrients. Wetlands also attenuate floodwaters and provide groundwater recharge. For these reasons, it is important to protect these areas from disturbance and mitigate any disturbances that may occur. Impacts to sensitive aquatic environments are described in the Wetlands Section and Waters of the US section.

3.2.2 Impacts

Impact criteria define the level of direct and indirect impacts on water quality, hydrology, and storm water runoff. The purpose of the establishing impact criteria is to determine when an impact is adverse under NEPA and substantial under CEQA.

The following general criteria were used to evaluate the impacts of the proposed project on water quality, hydrology, and storm water runoff:

- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?
- Violate any waste discharge requirements or water quality standards?

Any impacts to the wetland and water resources would likely come from a degradation of water quality. There could be temporary and permanent impacts as a result of poor water quality protection during and following construction. In turn, degradation to wetland and water resources could substantially affect sensitive biological resources, primarily the aquatic species but also birds that feed in the wetland areas.

3.2.2.1 Impact Discussion

Feather River

The Feather River is a water body of special concern because it is included on the EPA-303-D list for impaired water bodies. The impairment to its beneficial uses is caused by elevated levels of Diazinon, Group A Pesticides, mercury, and unknown

toxicity. Caltrans highway runoff is not a likely contributor to pesticide impacts because pesticides are not used for roadside maintenance. However, since there could possibly be low levels of mercury contained in the sediments from historic mining operations within the project area, excessive amounts of sediment disturbance in the project area could lead to a short-term increase in mercury levels.

Short-term Impacts During Construction

The length of the construction period will not vary greatly between the three alternatives. Alternative selection will not change the impacts to Segments 1 or 2 where most of the biological resources occur.

Sediments, Turbidity, and Floating Material

Suspended material in storm water runoff is considered a pollutant of primary importance by Caltrans on all projects. Erosion is the primary source of suspended material. Project construction activities would result in soil and ground disturbances. These disturbances would create loose and/or unprotected soil that if not properly managed and contained on the project site could be carried by surface runoff, or wind, to watercourses. Such increases in sediment and turbidity could adversely affect receiving water quality. These impacts have the potential to occur for the duration of construction activities.

The following construction activities would be part of any of the build alternatives, and may contribute to increases in sediment, turbidity, and floating materials to receiving waters.

Daily contractor activity - Routine construction activities such as material delivery, storage and usage, waste management, vehicle/equipment cleaning and operation, and use of a construction staging area could result in generation of dust, sediments, and debris.

Vegetation removal/trimming - Removal or trimming of vegetation would be required for both construction and access. This activity would eliminate the groundcover that protects the topsoil. Exposed topsoil would be more susceptible to erosion. Additionally, trimmings could fall or be carried by runoff into surface waters, resulting in introduction of floating material and the potential for increased organic loading to the creeks.

Grading - Grading would include removal of the natural and/or stabilizing cover (topsoil) and the creation of engineered slopes using fill material. Prior to

establishment of temporary or permanent erosion control measures, graded material would be highly susceptible to erosion.

Temporary roads - Construction of temporary roads would require grading, vegetation removal, and other changes to the topography and drainage characteristics of the watershed. These temporary roads are typically composed of native material and/or aggregate base rock.

Activities within the creek corridor - Construction of culverts, bridges and viaducts require an extensive presence in stream corridors. These activities may also require construction of temporary access roads, temporary cofferdams, and/or jetties to re-route the watercourses.

Dewatering - Construction may require localized dewatering in areas of shallow groundwater. Dewatering activities would be continuous but temporary for the duration of work in a particular area. Discharged groundwater may be high in turbidity.

Construction of temporary structures - To support construction equipment, laborers, and construction forms, it would be necessary to erect falsework. Falsework is typically constructed of wood and metal connectors. Although the majority of woodcutting would take place outside of the stream corridors, some woodcutting would be necessary as the falsework is erected. This woodcutting could introduce sawdust to surface waters. Disassembly of the falsework may result in small pieces of wood, nails, and metal cuttings entering creeks.

Seeding and application of fertilizers and nutrients - To prepare the ground for temporary and/or permanent cover and promote better growth, fertilizers and plant nutrients may be applied before and after planting. In the early stages of the seeding process, surface runoff could wash some of the re-vegetation material, fertilizers, nutrients, and seeds into surface waters.

Oil, Greases, and Chemical Contamination

Construction activities may introduce chemicals, oils, and greases that could be carried by surface runoff to surface water if not properly managed. These impacts have the potential to occur for the duration of construction activities. The following are some common construction activities that may cause impairment:

- Cement and grout - As part of the bridge construction process, concrete and grout work would take place within stream corridors. Spillage of concrete and grout

into receiving waters during bridge construction could increase turbidity and alter the pH.

- Application and storage of chemicals - Accidental spills, improper storage, and improper application of chemicals during construction could potentially impact water quality. Chemicals such as herbicides and fertilizers could also be washed into the creeks. Herbicides could be poisonous to fish and aquatic plants. Conversely, fertilizers may promote algae growth, which would reduce dissolved oxygen levels.

- Application and storage of oils, greases, and fuels - Improper storage of oils and fuels could result in accidental spills and/or leaks within the construction area. Accidental spills during refueling and maintenance of construction vehicles and equipment could occur. Surface runoff could transport these materials to the local creeks. Similarly, application of petroleum chemicals during road construction could be washed into surface waters. These materials could have toxic effects on aquatic organisms.

Increases in Temperature

Certain construction activities may contribute to short-term temperature changes in the receiving waters. Temperature changes would be considered substantial if these increases were to cause or contribute to an impairment of wetland or water resources in regards to aquatic species use. The following activities may cause short-term temperature changes:

- Concrete curing - Piers are typically constructed using reinforced concrete. Once concrete is poured in the forms, it takes up to several weeks to set - also referred to as the curing period. During the curing period, concrete releases heat into its surrounding environment. Water is often used during this process. To the extent that this water were to reach surface waters, it could cause a localized increase in the ambient temperature.

- Vegetation removal/trimming - During construction, vegetation at or near the creeks would require trimming or removal. Vegetation provides shade, which maintains cooler water temperature in the creeks. Once vegetation is removed or trimmed, water temperatures may increase due to exposure to direct sun light.

- Creek realignment - Where segments of creeks are realigned, they may not have the same canopy cover/shade as before the project. Prior to vegetation reestablishment, increases in temperature may occur.

Long-term Impacts During Operation

Sediments, Turbidity, and Floating Material

Sediment is of specific concern in the project area since it has the potential to be a source of impairment.

- Hydrologic impacts - The increase in impervious areas could cause an increase in the peak flow and higher runoff volumes that could lead to stream downcutting, stream bank erosion, and loss of stream structure. The result could be an increase in sediment and turbidity in receiving waters.

- Concentration of runoff - Typical highway drainage design involves collecting runoff in pipes or ditches, and discharging, either directly or indirectly, into receiving waters. Collected runoff should be discharged into perennial creeks.

To the extent that localized flows were concentrated and/or altered from pre-project conditions, potential impacts would be similar to those described for increases in impervious areas.

Oils, Greases, and Chemical Contamination

Highway runoff and other long-term maintenance activities may introduce chemicals, oils, and greases to surface water. Typical highway related activity and maintenance that affect runoff quality are.

- Highway runoff - Contaminants generated by traffic, pavement materials, and airborne particles that settle and are carried by runoff into receiving waters.

- Accidental spills - Spills caused by highway-related traffic accidents have the ability to cause great damage to water quality, depending on the type and quantity of the material spilled.

- Application of chemicals - Application of chemicals from landscaping operations and maintenance activities could potentially enter into receiving waters. Herbicides could be poisonous to fish and other aquatic animals and to aquatic

plants. Conversely, fertilizers may promote algae growth, which would reduce dissolved oxygen levels.

Highway runoff quality is influenced by several factors, including land use, rainfall, antecedent conditions, soil type, and atmospheric deposition. Numerous monitoring studies have been performed to characterize the quality of storm water runoff from the California highway system. These studies have involved the collection of runoff samples and analysis of the samples for a wide range of water quality parameters and pollutants.

Along SR 99, storm water and agricultural runoff is anticipated to contain most of the conventional pollutants, minerals, metals, and bacteria that have been found at other Caltrans sites. Few, if any, of the hydrocarbons (except oil and grease), volatile and semi-volatile organic compounds, or pesticides/herbicides are anticipated to be found, given the rural setting of the site.

Build Alternatives

Level of Impact:

- Potentially adverse.
- This impact is considered potentially significant under CEQA.

No Build Alternatives

Level of Impact:

- No Impacts.

3.2.3 Mitigation

3.2.3.1 Short Term and Long Term Impacts Mitigation Measures

Impacts that are going to occur during construction and corresponding mitigation will be addressed in the Storm Water Pollution Prevention Plan prepared by the contractor as required by (Standard Special Provision) SSP 07-345 and the Caltrans Permit No. 99-06-DWQ. The following mitigation measures will ultimately address the long-term effects.

Sediments, Turbidity, and Floating Material

Revegetation efforts may take time to provide adequate coverage, and mulches and other stabilizers may break down or be degraded by wind or runoff processes. These factors could create unprotected soil that could be carried by surface runoff or wind to watercourses, if not properly managed. The resulting increases in sediment and turbidity could adversely affect water quality. These impacts have the potential to occur for the duration of the project operation and will be minimized through the implementation of construction Best Management Practices (BMP) to the Best Available Technology/Best Conventional Technology (BAT/BCT).

Oils, Greases, and Chemical Contamination

The specifications and statewide permit conditions prohibit the contractor from discharging oils, greases, or chemicals into receiving waters. For example, on this project, equipment operating in water bodies would be required to be steam cleaned prior to arrival on site, and be maintained in a clean condition during the length of activities. With implementation of the construction BMPs and SSPs, all of the build alternatives would have less than adverse effect from construction induced oils, greases, and chemicals.

Mercury

Mercury is known to occur within the Feather River System due to historical gold mining operations. There is potential to increase the short-term mercury levels in the immediate project area if excessive amounts of sediments are disturbed. For these reasons, it is imperative to keep the in-channel disturbances to a minimum so that the mercury levels are kept in check.

Increased Temperature

Caltrans does not have any standard BMPs or other provisions that directly address temperature impacts. However, concrete curing would occur over a period of several weeks, and be so localized in nature that impacts would be less than substantial for all alternatives.

Regarding vegetation removal/trimming and creek realignments, Caltrans would follow standard practices for minimizing the amounts of vegetation required to be trimmed or removed at crossings. To some extent, the project would tend to be self-mitigating with respect to impacts, since shade provided by the new crossings would tend to offset some loss in canopy cover through trimming/removal and realignment. Typically, the time between removal of vegetation and completion of the bridge (or at

a minimum falsework that would provide shade) would be less than a single construction season. Measurable temperature impacts would not be expected where work is done in limited areas.

The Caltrans NPDES permit requires that Caltrans consider the installation of permanent water quality treatment systems for any major construction project. Best Management Practices (BMPs) for sediment control and treatment were considered in accordance with Caltrans State Wide Storm Water Management Plan (SWMP). The additional lanes and associated impervious surface qualifies as a major construction project. Additional runoff from highways has the potential to increase contaminants in the surrounding water bodies. Mitigating with vegetated strips, which will allow additional areas for infiltration and filtration of highway runoff, is recommended. The project limits contain many areas that currently act as bio-swales, which help improve storm water runoff through infiltration, sedimentation, and natural biological actions. Those areas that naturally treat storm water should be avoided to the maximum extent practicable. New bio-swales and strips are recommended to help treat the additional runoff. These measures should provide treatment through infiltration, filtration, sedimentation, and biological processes, thereby mitigating the water quality impacts to a less than adverse level.

Build Alternatives

Level of Impact After Mitigation:

- Less than adverse.
- This impact is considered less than significant under CEQA.

3.3 Hazardous Waste

3.3.1 Affected Environment

The project site and vicinity are characterized as rural, primarily comprised of agricultural land (orchards and rice fields) on both sides of SR99. Residences are scattered throughout the project area.

The California Department of Transportation's North Region Hazardous Waste office conducted an Initial Site Investigation (ISA) for the proposed project. The ISA was based on an analysis of findings from a preliminary site investigation (PSI), review of

the "Cortese list", and a record search from VISTA Information Services. The ISA identified seven properties as having potential hazardous waste issues.

It is Caltrans policy when acquiring properties to avoid all potential aspects of hazardous waste issues whenever possible. Hazardous waste issues include impacts to soil and groundwater due to leaking underground storage tanks (USTs), surface spills, highway spills, asbestos containing material, lead-base paint, and aerial deposited lead (ADL).

3.3.2 Impacts

The following general criteria were used to evaluate the significance of hazardous waste impacts resulting from the proposed project. Would the proposed project:

- Create a potential health hazard?
- Involve the use, production, or disposal of materials that pose a hazard to human, animal, or plant populations in the project area?
- Create a risk of explosion or release of hazardous substance (including, but not limited to, pesticides or chemicals) in the event of an accident or upset?
- Pose a threat to public health and safety or the environment through release of emissions or risk of upset?
- Require a substantial expansion of hazardous materials response staff and equipment to ensure adequate response capability to accidental release of hazardous materials?
- Interfere with emergency response plans or emergency evacuation plans?

3.3.2.1 Impact Discussion

Based on the PSI, review of the "Cortese List" and record searches by VISTA Information Services, there are a total of 11 properties (sites) with potential hazardous waste issues. Table 3-1 summarizes the possible hazardous waste sites by alternative.

Table 3-1 – Potential Hazardous Waste Sites Per Alternative

	ACM* & Lead-based Paint Only	Hydrocarbon & Groundwater Contamination Only	Both Hazardous Waste Issues	Total
Alternative 1	1	3	1	5

Alternative 2	1	3	0	4
Alternative 3	3	2	6	11

*ACM: Asbestos Containing Material

The implementation of the proposed project would potentially disturb areas, which may contain hydrocarbon and groundwater contamination. Alternative 3 contains eight potential areas, the highest number for the three alternatives. Alternative 1 has four sites and Alternative 2 has three potentially contaminated areas within the proposed right of way.

Construction of the project would result in the demolition of existing houses and/or businesses. These structures could contain asbestos containing materials (ACMs) and/or lead-based paint. Prior to demolition, the structures would be inspected to determine the presence/absence of these substances.

Lead-contaminated soil may exist due to the historical use of leaded gasoline, leaded airline fuels, and waste incineration. The areas of primary concern in relation to highway facilities are soils along routes that have had high traffic volumes or high vehicle emissions due to congestion or stop and go situations during the time period that leaded gasoline was in use. For practical purposes, most Aerially Deposited Lead (ADL) due to automobile emissions would have been deposited prior to 1986. If the project area was constructed or reconstructed with clean material after 1986, it is likely that the levels of ADL contaminated soil are low. The only way to approximate the level of ADL contaminated soil is by sampling and testing the project area by performing a Preliminary Site Investigation (PSI). Depending on the test results, soil on the project may have to be managed as a hazardous waste in compliance with State and Federal laws.

Build Alternatives

Level of Impact:

- Potentially adverse.
- This impact is considered less than significant under CEQA.

No-Build Alternative

Level of Impact:

- No Impacts.

3.3.3 Mitigation

Caltrans shall perform a more detailed site investigation (Phase II Study) on the preferred alternative, including drilling of test holes and collection and laboratory analysis of collected soil and/or water samples, to confirm or dismiss potential hazardous waste issues.

Prior to commencing the Phase II study, a Health and Safety Plan shall be prepared which addresses the potential effect of the various chemical compounds that could be encountered at each property with potentially hazardous substance issues.

Upon confirmation of hazardous waste issues, responsible parties will be sought for cleanup activities. If Caltrans must clean up impacted properties, reimbursement of cleanup costs will be sought from the responsible party(ies).

Depending on final project design, existing houses and/or buildings could be demolished for construction of the project. These structures could contain ACMs and/or lead-based paint. Asbestos can pose a health risk if the fibers become airborne during removal and are inhaled. Dust and paint chips from lead-based paint can pose a health risk if they are inhaled or swallowed.

Before structures are demolished or disturbed an Asbestos Hazard Emergency Response Act (AHERA) trained inspector would be hired to determine the presence/absence of ACMs, and a Certified Lead Inspector/Assessor would determine the presence /absence of lead-based paint. If any structures were found to contain these substances, registered asbestos and/or lead abatement contractors would handle debris removal and disposal according to requirements set forth by the California Occupational Safety and Health Administration (Cal-OSHA) and the Feather River Air Quality Management District.

For impacted soils encountered on potential acquisition properties, possible cleanup technologies include excavation and disposal of the impacted soils at appropriately permitted landfills, extraction of contaminated vapors, and aeration or bioremediation of soil in situ or above ground. All soil remediation shall be performed within the existing policies, rules and regulations of governing regulatory agencies.

Build Alternatives

Level of Impact After Mitigation:

- Beneficial impact, resulting from clean up of sites containing hazardous substances.

3.4 Air Quality

3.4.1 Affected Environment

The proposed project is located in the Sacramento Valley Air Basin (SVAB) and comes under the jurisdiction of the Feather River Air Quality Management District. The Feather River Air Quality Management District has jurisdiction for both Yuba and Sutter Counties. For each county, the Environmental Protection Agency (EPA) designates the status for meeting National Ambient Air Quality Standards (NAAQS) regulated under the Federal Clean Air Act. Sutter County's status for the National Standard is as follows: Transitional for Ozone, Unclassified/Attainment for particulate matter (PM 10), Unclassified/Attainment for nitrogen dioxide, sulfur dioxide, carbon monoxide, and sulfates.

The California Air Resources Board is the agency that designates the status of Sutter County for meeting the California Ambient Air Quality Standards (CAAQS). Sutter County's status for meeting the state standard is as follows: Moderate Non-Attainment for Ozone in Northern Sutter County and Serious Non-Attainment for Ozone in Southern Sutter County, and Non-Attainment for particulate matter (PM10), Attainment for Carbon Monoxide, Attainment/Unclassified for Nitrogen Dioxide, sulfur dioxide, and sulfates. Table 3-2 summarizes the attainment status for state and federal ambient air quality standards.

A project that is located in an area of nonattainment is required to do a regional conformity analysis. A conformity determination is made if a project is included in the Regional Transportation Plan (RTP) and the Transportation Improvement Program (TIP). This project is included in a current RTP and the TIP for which a California Environment Quality Act (CEQA) review has been conducted.

Within the State of California, naturally occurring asbestos is known to exist in serpentine rock. Serpentine, the "state rock" of California, is a greenish, greasy-looking rock that is common in the coast ranges, Klamath Mountains, and Sierra foothills. Asbestos is a potent carcinogen, particularly when inhaled. It is therefore regulated as an airborne toxic material, and strict limits are placed on its use and handling in working environments. To ensure that asbestos is not present in the project site, maps have to be consulted prior to project approval. A map of District 3 with known locations of serpentine rock is attached. From the map, Yuba County is

known to contain ultramafic rock, which is known to consist of serpentine. Most of the area in this county that contains this rock is located in the Foothill area of this county. If asbestos is found, the Feather River Air Quality Management District Rule 11.6 must be adhered to when handling this material. State Route 99 goes through agricultural and residential areas of Sutter County and does not disturb any areas that are known to contain ultramafic rock. Therefore, construction of this project would not release any asbestos in to the air.

Table 3-2 - Attainment Status of Feather River Air Quality Management District

Attainment Status of Feather River Air Quality Management District with the State and Federal Standards			
Pollutant		**State Standard**	**Federal Standard**
O_3	**1 Hour Standard**	Moderate Non-Attainment for Yuba County and the Northern Portion of Sutter County Serious Non-Attainment for Southern Sutter County	Transitional
	8 Hour Standard	Not Applicable	Awaiting EPA Designation
PM_{10}		Non-Attainment	Unclassified/Attainment
NO_2		Unclassified/Attainment	Unclassified/Attainment
SO_2		Unclassified/Attainment	Unclassified/Attainment
CO		Attainment-Sutter County Unclassified-Yuba County	Unclassified/Attainment
Sulfates		Unclassified/Attainment	Unclassified/Attainment

3.4.2 Impacts

The following general criteria were used to evaluate the significance of air quality impacts resulting from the proposed project. Would the proposed project?

- Violate any ambient air quality standard?
- Contribute substantially to an existing air quality violation?
- Expose sensitive receptors to substantial pollutant concentrations?

3.4.2.1 Impact Discussion

The air quality analysis results yield no violations of the National Ambient Air Quality Standards or the California Ambient Air Quality Standards. The modeled 1 and 8 hour CO concentrations for all build alternatives as well as the no build

alternative are well below the standards. Therefore, this project will have no air quality impacts to the region. Table 3-3 summarizes these air quality findings.

Table 3-3 - Summary of CO Concentrations

MAXIMUM CO CONCENTRATIONS AT RECEPTOR LOCATIONS ALONG PROPOSED ALTERNATIVES – 8 HOUR CONCENTRATIONS				
	Alternative 1 (2025)	Alternative 2 (2025)	Alternative 3 (2025)	No Build (2000)
ppm*	4.8	4.8	4.8	4.6

Source: Caline4 and screening procedure
California Ambient Air Quality Standards (CAAQS) for CO is 9.0ppm*.
National Ambient Air Quality Standards (NAAQS) for CO is 9 ppm*
*ppm = parts per million

Construction Impacts

Construction is a source of dust emissions that can have a substantial temporary impact on local air quality. Construction emissions would result from earthmoving (dust generation) and heavy equipment use. These emissions would be generated from land clearing, ground excavation, cut and fill operations, and the construction of the roadway itself. Dust emissions will vary substantially from day to day depending on the level of activity, the specific operations, and the prevailing weather.

All Build Alternatives

Level of Impact:

- Less than adverse impact.
- This impact is considered less than significant under CEQA.

No-Build Alternative

Level of Impact:

- No Impacts.

3.4.3 Mitigation

Standard Best Management Practices (BMPs) would be implemented for the proposed project in accordance with Section 7.1.01F (Air Pollution Control), Section 10.1 (Dust Control) of the current Caltrans' Standard Specifications and with Feather River Air Quality Management District Rule 3.16 (Fugitive Dust Emissions).

3.5 Noise

3.5.1 Affected Environment

Agriculture is the primary land use in the project vicinity. Orchards and rice fields predominate in the project area; however, scattered residences do also exist along the SR 99. The exceptions to this predominately agricultural setting are clusters of residences at Central Ave and within the community of Tudor. Sixty-six existing residences and two churches along the SR99 were identified as noise sensitive receptors potentially affected by the proposed project. Noise levels within the project vicinity are dominated by highway traffic.

A field noise investigation was conducted to quantify existing noise levels at representative locations throughout the study area. Noise measurements were made using Larson Davis Model 820 and 812 Integrating Sound Level Meters. The Model 820 Sound Level Meters were equipped with G.R.A.S. Type 40AQ ½-inch random incidence microphones. The sound level measuring assemblies were calibrated prior to each measurement using either a Larson Davis Model CA250 or Model CAL200 Calibrator to comply with the American National Standards Institute (ANSI) standard S1.4-1971 for Type 1 (precision) sound level meters.

Sound32 and LeqV2, Caltrans' versions of the Federal Highway Administration's (FHWA's) Traffic Noise Prediction Models (FHWA-RD-77-108), were used in this analysis to establish existing noise levels and evaluate traffic noise for future design year conditions.

3.5.2 Impacts

Due to the length of the project, the noise impacts were analyzed by alternative. Based on roadway geometrics of the proposed project and the future traffic volumes provided by Caltrans Office of Traffic Forecasting and Modeling, future traffic noise levels were calculated for the build and no-build alternatives.

Table 3-4 – Impacted Receptors by Alternative

Potential Impact	Alternative 1	Alternative 2	Alternative 3	No Build Alternative	Minimization /Mitigation

Noise	# of receptors ≥ Leq 67 dBA	35	29	15	37	Not Feasible & Reasonable

The following general criteria were used to evaluate the significance of noise impacts resulting from the proposed project. Would the proposed project:

- Substantially increase (by 12dBA, $L_{eq(h)}$) the ambient noise levels at adjoining noise-sensitive land uses?
- Expose people to severe noise levels?

3.5.2.1 Impact Discussion

Based on traffic projections, noise levels without the project are predicted to increase by 3 to 5 dBA through 2025 as a result of increased vehicular traffic along SR 99. Traffic noise level increases would be about 2 dBA to 11 dBA over existing levels under Alternatives 1, 2, and 3. Noise level increases of about 2 dBA would occur at certain residences currently affected by traffic noise along the existing highway alignment. Noise level increases up to 11 dBA would occur at certain residences where the existing highway alignment is substantially altered.

Predicted noise levels are shown in Table 3-4 which indicate that Alternative 1 has 35 receptors (mostly residences) which would experience an increase in noise levels that approach and/or exceed the Noise Abatement Criterion (NAC) of 67 dBA $L_{eq(h)}$. Alternatives 2 and 3 have 29 and 15 receptors, respectively, which would experience levels approaching and/ or exceeding the NAC level. Due to the number of receptors predicted to experience noise levels that approach or exceed the NAC, noise abatement measures have been considered.

Under Caltrans and FHWA policies, feasible noise barriers must provide a minimum 5 dBA reduction in traffic noise. Furthermore, under Caltrans policies, noise barriers should interrupt the line of sight between a truck stack (of average height) and a receiver. Chapter 1100 of the Highway Design Manual identifies particular design guidelines that should be met for noise barriers, depending on roadway conditions.

The feasibility and reasonableness allowance of noise barriers was studied where receivers would be noise impacted. A preliminary calculation of the lengths and heights required for noise barriers to reduce noise levels by 5 dBA and block the line-of-sight to truck stacks was made for each impacted receiver location. These

preliminary calculations found that receivers between 40m and 130m from the roadway, which do not have direct access to SR99, could benefit from soundwalls of 3.0 (9.8 ft.) to 4.3 meters (14.1 ft.) high. For receivers which have direct access to the highway, sound walls of 3.7 (12.1 ft.) to 4.3 meters (14.1 ft.) high would be needed.

Many of the impacted receivers are isolated and, therefore, would require individual noise barriers. In addition, many of these receivers have driveway access which reduces the effectiveness of noise barriers. The cost of constructing a barrier to benefit a lone receiver and maintain the current access requirement would exceed the reasonableness allowance for an individual receiver. Therefore, no soundwall construction is proposed.

3.5.2.2 Construction Noise Impacts

Construction activities associated with the SR 99 Project include roadway widening and new highway alignment construction. Highway construction activities do not typically stay in one location for long periods. Noise sensitive receivers in a given location would not be exposed to noise generated by construction for extended periods. Table 3-5 summarizes typical noise levels generated by construction equipment at a distance of 15 meters (49.2 ft). Noise generated by construction equipment drops off at a rate of 6 dB per doubling of distance. The following standard practices will reduce construction noise impacts:

- The contractor shall comply with all local sound control and noise levels rules, regulations and ordinances which apply to any work performed pursuant to the contract (Caltrans Standard Specification Section 7-1.01(I) “Sound control requirements”).
- Each internal combustion engine, used for any purpose on the job or related to the job, shall be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine shall be operated on the project without the muffler (Caltrans Standard Specifications Section 7-1.01(I) “Sound control requirements”).
- Stationary construction equipment, such as compressors and generators, should be shielded and located as far away as feasible from receptor locations.
- Place any maintenance yard, batch plant, haul roads, and other construction operations as far as possible from sensitive receptor locations.
- A Traffic Management Plan will provide methods and restrictions to minimize construction traffic impacts to residents.

Implementing Caltrans' standard construction practices will minimize the construction impacts of this project.

Table 3-5 - Construction Equipment Noise

Type of Construction Equipment	Maximum Level, dBA at 15 meters
Scrapers	89
Bulldozers	85
Heavy trucks	88
Backhoe	80
Pneumatic tools	85
Concrete Pump	82
Impact Pile Driver	95 to 105

Source: NCHRP, 1999

Build Alternatives

Level of Impacts:

- Potentially adverse.
- This impact is considered not significant under CEQA.

No-Build Alternative

Level of Impact:

- No Impacts

3.5.3 Mitigation

This noise study included an analysis of the noise reduction from sound walls for various receiver setback conditions for cases with and without driveway access. These preliminary calculations found that impacted receivers between 40 m (131.2 ft) and 130 m (426.5 ft) from the roadway, which do not have direct driveway access to SR 99, could benefit from sound walls of 3.0 to 4.3 meters (9.8 – 14.1 ft) high. For receivers which require direct driveway access to SR 99, longer and taller sound walls would be necessary to provide a feasible benefit. Preliminary calculations indicate that sound walls would have to be 3.7 to 4.3 meters (12.1 – 14.1 ft) high and range in lengths from about 120 m to 215m (393.7 – 705.4 ft).

Due to the distribution and locations of the residences which may be impacted, from a cost standpoint, it is clearly unreasonable to construct a sound wall within the right of way to protect only one residence. The calculated resonableness allowance per benefited residence ranged from $29,000 to $35,000 (Illingworth & Rodkin, 2001.) The noise study (Illingworth & Rodkin, 2001), found that 24 residences would each require a soundwall, which means that the total soundwall cost could not exceed $768,000. Based on calculations from the noise study, the actural total cost of these soundwalls would range between $2,790,875 and $3,152,250 which substantially exceeds the allowable cost of $768,000 calculated according to the reasonableness criteria.

Alternative 3 (Preferred Alternative) does not have receivers which experience an increase of 12 dBA or more. In addition, of the 15 receptors which meet or exceed the NAC, the No Build would also meet, and in many cases exceed, the NAC. There would be no substantial noise impacts associated with the preferred alternative.

Level of Impact After Mitigation:

Build Alternatives

- Less than adverse impact.
- This impact is considered not significant under CEQA.

3.6 Wetlands and Waters of the U.S.

Wetlands are defined as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions." The "other waters of the U.S." includes seasonal or perennial waters (creeks, lakes or ponds) and other types of habitats that lack one or more of three technical criteria for wetlands (soil, hydrology, vegetation). The Army Corp. of Engineers (ACOE) has authority under Section 404 of the Clean Water Act to regulate activities that could discharge fill or dredge material into, or otherwise adversely modify these resources. Permits issued by ACOE require mitigation to offset impacts to ensure no net loss of wetland acreage or value. Individual and Nationwide Permits are required for projects which have the potential for varying amounts of impact to wetlands.

3.6.1 Affected Environment

The study area is a linear corridor following existing State Route 99 through the central and southeastern sections of Sutter County. The proposed project lies within the flat topography of the Sacramento Valley. The elevations range from 25-45 feet above sea level.

The Sacramento Valley was historically a large riparian floodplain. For the last two centuries, man has significantly altered the landscape for the purpose of agriculture. All that remains of the original habitat are small strips of riparian vegetation that closely follow the larger rivers and streams. The land has been converted, primarily in the past two centuries, to agriculture land. From the south to the north, there are rice fields, grain cultivation, orchards and some row crops.

3.6.1.1 Study Methodology

A variety of methods were used to study the project area in order to comply with the provisions of various state and federal environmental statutes and executive orders. The presence of natural resources and potential for wetlands to occur were investigated and documented by utilizing the methodology set forth in the *1987 Wetlands Delineation Manual* from the ACOE. A positive determination for wetlands was made based on the presence of hydrophytic vegetation, hydric soils, and wetland hydrology.

The predominanant form of wetlands and waters of U.S. within the study area are riverine sloughs (waters/wetlands), agricultural ditches and roadside ditches (Figure 3-1 a-c).

Waters/Wetlands: Bunkham, Ping and Nelson Sloughs are all considered wetlands and waters. In addition, the Feather River is considered waters of the U.S. Wetlands are defined by meeting the three parameters set forth by the 1987 Wetland delineation manual. Freshwater emergent wetlands are among the most productive wildlife habitats in California, providing forage, cover and water for numerous birds, mammals, reptiles, amphibians and invertebrates (CDFFP, 1988).

Agricultural Irrigation Ditches: These are ditches that usually flow adjacent or within orchards, croplands and rice fields. Most of these ditches are routinely maintained and lack the vegetative cover that makes emergent wetlands so valuable to wildlife. These ditches are located throughout the project area

Roadside Ditches: These are ditches within the Caltrans right of way used to convey roadside runoff away from the highway. Within the project area most of these ditches do not retain water long enough to create wetlands. These ditches are maintained annually by the Caltrans maintenance crews to prevent vegetation from establishing and inhibit water from flowing away from the highway. When water is present, primarily during the winter/spring, some bird species may be seen foraging within these ditches including Great blue herons (*Ardea herodias*), Great egrets (*Casmerodius albus*) and Snow egrets (*Leucophoyx thula*).

Figure 3-1a – Locations of Wetlands and Waters Segment 1

Figure 3-1b – Locations of Wetlands and Waters Segment 2 (Feather River Bridge)

Figure 3-1c – Locations of Wetlands and Waters Segment 4 (Tudor Bypass)

3.6.1.2 Wetlands/Waters of the US

BUNKHAM SLOUGH is considered Waters of the U.S. Within the slough, along the margins, wetlands have established. Bunkham slough originates east of the project area and heads west under the existing highway. This slough appears to be fed by agricultural fields and wells in the area in addition to its natural source. Bunkham slough feeds into one canal, which then feeds into Cross Canal and right after that drains into the Sacramento River.

COON CREEK is considered Waters of the U.S. Like Bunkham Slough, the margins of Coon Creek contain wetlands as delineated under the 1987 ACOE manual. Coon Creek comes from east of Highway 70 before it crosses under existing Highway 99. To the west of the highway, Coon Creek converges with Ping Slough. They drain into Main Canal and then into the Sacramento River.

PING SLOUGH is similar to Bunkham Slough and Coon Creek. It is primarily waters of the U.S., but along the margins wetlands have established. Ping Slough originates Northeast of the project area, east of Highway 70. Ping Slough converges with Coon Creek and eventually drains into the Sacramento River south of the project area.

FEATHER RIVER is a navigable Waters of the U.S. and falls under Section 10 of the Rivers and Harbors Act. This portion of the Act is under the jurisdiction of the Coast Guard. The Feather River is within levee boundaries and is bordered on the north side by the Feather River State Wildlife Area. There is a small backwater area on the south side of the bridge that provides excellent foraging habitat for birds. This backwater area has wetlands along the margin.

NELSON SLOUGH is within the confines of the levee, north of the Feather River. During peak storm events, Nelson Slough converges within the levees with the Feather River. Within the project limits this slough has more developed riparian and lacks the emergent wetlands that Ping and Bunkham sloughs have. Nelson Slough drains directly into the east canal and then into the Sacramento River a few miles south. This slough was dry during the summer months.

3.6.2 Impacts

Impact criterias define the level of direct and indirect impacts on wetlands and Waters of the U.S. The purpose of the impact criteria is to help determine when an impact is adverse under NEPA and significant under CEQA.

The following general criteria were used to evaluate the impacts of the proposed project on Wetlands and Waters of the U.S. Will the project result in:

- Removal, filling, grading, or disturbance of wetland, riparian, and stream corridors?

Wetlands and "Other Waters" can be impacted in two ways: 1) Fill and Diversion and 2) Water Quality. Under fill and diversion there can be temporary and permanent impacts. Water quality could have permanent impacts; however, there are numerous regulations that prevent permanent impacts and reduce temporary impacts. A summary of impacts are given in Table 3.6b.

3.6.2.1 Impact Discussion

Impacts from Fill and Diversion

Temporary impacts to wetlands include the temporary fill of wetlands during construction which would be removed immediately following construction, the temporary disturbance to vegetation and the temporary dewatering which may be required. Temporary impacts may be required during construction for the following reasons: 1) to provide access to other construction areas, 2) to provide equipment access for work on culverts and/or, 3) to dewater to maintain water quality standards during construction.

Temporary Impacts to "Other Waters"

Temporary impacts to waters consist of dewatering during construction. Areas would be dewatered primarily to maintain water quality. Areas that are dewatered would be returned to the pre-construction state and the water returned to the pre-existing channel. Dewatering would not be a significant impact to the environment.

Permanent Impacts to Wetlands

Permanent impacts to wetlands occur where areas defined as wetlands are filled. Within the Sutter 99 widening project, fill includes the extension of culverts into wetland areas and the placement of bridge footings in areas delineated as wetlands. Once an alternative is selected, the design will be refined so that impacts to wetland areas will be the minimal amount necessary to construct the project. Mitigation will be incorporated to offset the loss of wetlands. There will be no net loss of wetlands from this project.

Permanent Impacts to "Other Waters"

There will be no permanent impacts to "Other Waters". A permanent impact to "Other Waters" would consist of a complete impairment to the waterbody. No portion of this project will completely impair or impede the flow of a water body. Even placement of piers in the Feather River will not impede the flow of the water. Since the flow will remain the same, there will be no significant impact from the fill in "other waters".

Areas of Fill and Diversion

COON CREEK will be permanently and temporarily impacted by this project. The existing culvert will be extended in order to widen the highway. There will be temporary loss of wetlands and waters during the construction of the culvert. If there is water in the creek, the area will need to be temporarily dewatered during construction. There will be permanent fill of the wetlands along the margin of the creek. Flow will be maintained through a longer culvert following construction activities.

PING SLOUGH will be permanently and temporarily impacted by this project. The existing culvert will be extended in order to widen the highway. There will be temporary loss of wetlands and waters during the construction of the culvert. If there is water in the creek, the area will need to be temporarily dewatered during construction. There will be permanent fill of the wetlands along the margin of the creek. Flow will be maintained through a longer culvert, following construction activities.

FEATHER RIVER will be the most significantly impacted waters within the project limits. There will be a new parallel two-lane bridge placed on the east side of the existing bridge. This will require fill for the new piers. The amount of fill used will be the minimal amount necessary to construct the new bridge over the Feather River. There will be temporary water diversion in the form of cofferdams during the construction phase of the piers. There will be temporary fill during construction for the purpose of providing access to the piers that are not adjacent to existing upland work areas, this fill will be in the form of falsework, trestles, and platforms.

NELSON SLOUGH will be temporarily impacted during construction. Permanent losses will be limited to loss of riparian habitat. The new piers and footings should be parallel with the existing bridge. It is not expected that there will be any permanent fill of Nelson Slough. Access to the Feather River may require the temporary

culverting of Nelson Slough for the purpose of creating a crossing on the north side of the Feather River State Wildlife.

IRRIGATION DITCHES will be temporarily impacted with the widening of State Route 99. There are seven irrigation canals throughout the project study limits. The temporary impacts may include temporary diversion of the water during the lengthening of the roadway culvert. There will be no permanent impacts because the water will still flow through the culverts and to the fields following construction.

Table 3-6 - Amount of Impacts to Wetlands and Waters of the U.S.

Body of Water	Type	Temporary Impacts to Wetlands* hectares (acres)	Temporary Impacts to "Other Waters"* hectares (acres)	Permanent Impacts to Wetlands* hectares (acres)	Permanent Impacts to "Other Waters"* hectares (acres)
Bunkham Slough	"Wetlands" and "Other Waters"	0.008(0.02)	0.06(0.15)	None	None
Coon Creek	"Wetlands" and "Other Waters"	0.004 (0.012)	0.009(0.023)	0.001(0.001)	0.001 (0.002)
Ping Slough	"Wetlands" and "Other Waters"	0.006 (0.015)	0.012(0.031)	0.001(0.002)	0.002 (0.006)
The Feather River (main channel)	"Other Waters"	0	0.101(0.25)	0	0.101 (0.25)
The Feather River (backwater area)	"Wetlands"	0.156 (0.387)	0.054(0.135)	0.012 (0.03)	0.364 (0.901)
Nelson Slough	"Wetlands" and "Other Waters"	0.0	0.005 (0.014)	000	0.003 (0.007)
Irrigation Ditch 1	Waters	0.002 (0.006)	0.005 (0.013)	0.001 (0.002)	0.001 (0.003)
Irrigation Ditch 2	Waters	0	0	0	0
Irrigation Ditch 3	Waters	0	0.006 (0.016)	0	0.002 (0.005)
Irrigation Ditch 4	Waters	0.01 (0.036)	0.026 (0.066)	0.02 (0.05)	0.002 (0.004)
Irrigation Ditch 5	Waters	0.002 (0.006)	0	0	0
Irrigation Ditch 6	Waters	0	0	0	0
Irrigation Ditch 7	Waters	0.01 (0.032)	0.04 (0.104)	0.004 (0.012)	0.005 (0.013)
TOTAL IMPACTS	N/A	0.208 (0.514)	0.32 (0.802)	0.039 (0.097)	0.481 (1.19)

*Impact amounts are associated with the preferred alternative.

All Build Alternatives

Level of Impact:

- Adverse impact.
- This impact is considered significant under CEQA.

No Build Alternative

Level of Impact:

- No impact.

3.6.3 Mitigation

3.6.3.1 Wetlands

The minimal amount necessary will be disturbed during the construction of the widening. Standard BMPs (addressed below) will be implemented for both short-term and long-term impacts on wetlands and other waters to minimize water quality degradation. Permanent impacts to wetlands will be mitigated offsite at a ratio to be determined by the Regional Water Quality Control Board and U.S. Army Corp of Engineers following the selection of an alternative.

As shown in Table 3.6, the preferred alternative would have .208 ha (0.514 acres) of temporary impacts to wetlands, .039 ha (0.097 acres) of permanent impacts to wetlands, .32 ha (.802 acres) of temporary impacts to "other waters" and .48 ha (1.19 ac) of impacts to "other waters".

Temporary impacts to wetlands will be mitigated in place following construction. The affected areas will be returned to their pre-construction state. If revegetation is needed, native plant species (common and adapted to a wetland habitat) will be used to revegetate.

Permanent impacts to wetlands will be mitigated under the guidance of the regulatory agencies, primarily the Army Corp of Engineers at a ratio and in a location that is acceptable. There are two options for mitigation including the purchasing of credits at an approved mitigation bank or the creation of wetlands within the project area. Mitigation will result in no net loss of wetlands.

All Build Alternatives

Level of Impact After Mitigation:

- Less than adverse impact.
- This impact is considered less than significant under CEQA.

3.7 Vegetation and Invasive Species/Wildlife

3.7.1 Affected Environment

Natural Habitat

The SR 99 corridor in Sutter County has been significantly altered over the last 150 years from settlement, agricultural practices and industrialism. Natural habitat would be considered areas that contain an ecosystem similar to that which was in the Central Valley prior to settlement by Euro-Americans. Literature describes the Central Valley as a vast area of grassland, variable woodland and riparian corridors marked with gallery forests of cottonwoods, valley oaks and willow. There are limited areas within the project area that still contain what would be considered natural habitat.

Most grassland areas have been converted to agriculture lands, orchards, row crops or rice fields. Open grassland, once dominated by native vegetation, is now inundated with non-native plants and limited to small areas along the highway and areas not being farmed. Species that rely on grassland have adapted to using fallow fields, row croplands and roadsides.

Significant human impacts in the Central Valley have left very little woodland. Woodland areas were converted to croplands and orchards. Woodland is now limited to a few sparse clumps of trees between the highway and the fields, large trees planted near homes and rows of trees either planted or left for windbreaks. Woodland is an important component to the Central Valley. The bird populations have suffered the most from the loss of woodland habitat because the lack of trees limits nesting and perching habitat (Figure 3-2 a-b).

Figure 3-2a – Habitat Types and Locations Segments 1 and 2

Figure 3-2b – Habitat Types and Locations Segment 4

Annual Grassland

Annual Grassland is primarily comprised of non-native grass species including wild oats (*Avena fatua*), brome (*Bromus sp*.), Mediterranean barley (*Hordeum leporinum*) and invasive species like yellow star thistle (*Centaurea solstitialis*) and prickly lettuce (*Lactuca serriola*).

Annual grassland is found in the area between the existing highway and the right-of-way fence, lining most of the roadside ditches, in areas adjacent to the highway where there is no agriculture occurring and alongside houses and buildings where there is no landscaping.

Although primarily non-native, the annual grassland throughout the project area does provide some foraging habitat for birds, rodents and mammals including gray fox (Urocyon cinereoargenetus), Brewer's blackbird (*Euphagus cyanocephalus*), Northern harrier (*Circus cyaneus*) and California ground squirrel (*Spermophilus beecheyi*).

Cropland

There are a variety of crops being grown adjacent to the existing highway, which include barley, hay, alfalfa and rice. These areas are highly disturbed; however, they do provide a variety of habitat. The southern end of the project contains a higher percentage of cropland. From just south of Tudor to O' Banion Road there are predominately orchards.

Birds are commonly seen using croplands for foraging. The following birds were seen foraging during field surveys conducted by Caltrans: Greater Sandhill crane (*Grus Canadensis tabida*), Great blue herons (*Ardea herodias*), Great egrets (*Casmerodius albus*) and Snow egrets (*Leucophoyx thula*). Surveys completed by Department of Fish and Game north of Sacramento showed that in July some of the common species found in rice fields include: American bitterns (*Botarus lentiginosus*), American *coots (Fulica Americana*) and Greater Sandhill Crane (*Grus Canadensis tabida*).

During the winter, the Central Valley is an integral part of the Pacific Flyway. Dry rice fields are used by geese and swans for foraging. Flooded rice fields are used by these species for roosting and feeding (Hobaugh, 1984).

Cereal grain crops are commonly used by Greater Sandhill crane in the winter for foraging although they too will be seen using rice fields

Rice fields provide important habitat during late summer, when the fields are flooded and contain large numbers of mosquitofish (*Gambusia affinis*) and other food items. This food source may be especially important to newborn Giant Garter Snake (Hansen unpubl. notes).

The grain crops provide excellent foraging habitat for Swainson's hawk (*Buteo swainsoni*). They have been seen within the project area, near Striplin Road, using fields for foraging. They are nesting in a tree adjacent to the foraging grounds where they can watch for their prey.

Orchard

Fruit and nut orchards are adjacent to the north half of the project area. These areas are significantly disturbed and provide little habitat to wildlife species; however, there are a couple of species that are commonly observed utilizing orchards for foraging: Common raven (*Corvus corax*), Yellow-billed magpie (*Pica nutallii*) and Brewer's blackbird (*Euphagus cyanocephalus*).

Riparian Woodland

There are small sparse areas of riparian woodland throughout the project area. The largest remnant of this habitat type is found along the Feather River and at Nelson Slough. These sparse remnants often consist of cottonwood (*Populus sps*.), willows (*Salix sp*.) and singular valley oaks (*Quercus lobata*).

The large areas around the main rivers and streams often provide the only dense multi-storied habitat available to birds, amphibians, mammals and reptiles in the valley. Riparian areas also provide prime migration, foraging and breeding habitat for neo-tropical birds (CDFFP, 1988).

Species common to riparian woodland include the following: Belted Kingfisher (*Ceryle alcyon*), Nuttall's Woodpecker (*Picoides nuttallii*) and River Otter (*Lutra canadensis*).

Eucalyptus Grove

Eucalyptuses have been artificially established throughout many regions of California. They have been planted for erosion control and in urban areas for landscaping. They appear sporadically throughout the project area, mostly associated with homes and other buildings. Eucalyptus trees provide roosting, nesting and

perching habitat for species such as the common raven (*Corvus corax*), barn owl (*Tyto alba*) and red-shouldered hawk (*Buteo lineatus*).

Noxious Weeds/Invasive Species

If the area adjacent to the project area were less modified, a significant concern would be the introduction and spread of noxious weeds. The only area that is not entirely overrun with non-native vegetation is the riparian/slough area of the Feather River. The rest of the project and adjacent agricultural/residential areas are comprised primarily of species that are non-native. The grasses, which historically would have been species of bunch grass, are now wild oat and species brought in from Europe with cattle.

Pacific Flyway, Winter Foraging Habitat

The Central Valley is a key component of the Pacific Flyway. The Pacific Flyway is the path from Alaska that migrating birds take to get to their winter foraging grounds. The Central Valley provides a stopover, as well as a destination for a variety of species including, but not limited to, waterfowl and raptors. The Sacramento/Central Valley provides sixty percent of the wintering area for ducks and geese in the Flyway and habitat for twenty percent of the entire North American winter waterfowl population. (CDFG – Draft Mitigation, 1993)

The rice fields and fallow croplands emulate the flooded habitat that existed prior to the channelization and conversion of natural waterways. They provide the food, water, cover and space critical to the survival of these species. Breeding ducks rely heavily upon the various stages of rice cultivation.

Besides ducks and geese, there are other species that rely on the Central Valley habitat including Greater Sandhill Cranes, Blue Herons, Egrets (several species) and Marsh Waders (ie. White-faced Ibis). Raptors that migrate from Alaska and Canada also rely on the Central Valley and these species primarily forage in fallow fields and fields that were recently harvested. Many raptor species rely on the few remaining trees to perch and roost in.

Feather River State Wildlife Area

The area between the levees where the existing Feather River Bridge is located, is the Feather River State Wildlife Area. This is an area managed by the Department of Fish and Game. The habitat consists of riparian vegetation with valley oaks, willows

and cottonwoods. Both Nelson Slough and the Feather River run through the wildlife area.

Aquatic Habitat

Aquatic habitats consist of Waters, Wetlands, Agricultural Ditches and Roadside Ditches. Some of these features are more valuable to wildlife than others and some fall under the jurisdiction of regulatory agencies. Technically, under the jurisdiction of the U.S. Army Corps of Engineers who regulate the Federal Clean Water Act, waters is broken down into two categories: 1) Wetlands (vegetated waterways that have the three parameters outlined by the 1987 Manual) such as marshes and swamps. 2) Other Waters such as streams, rivers, lakes, ponds, bays and oceans.

3.7.2 Impacts

Impact criterias define the level of direct and indirect impacts on Vegetation and Invasive Species/Wildlife species. The purpose of the establishing criteria is to help determine when an impact is adverse under NEPA and significant under CEQA. Does the project result in:

- Substantial loss of common natural communities that provide habitat for wildlife?
- Substantial reduction in habitat for fish, wildlife, or plants?
- Disruption of natural wildlife movement corridors?
- Fragmentation or isolation of wildlife habitats, especially riparian, oak woodland, and wetland habitats?

3.7.2.1 Impact Discussion

Natural Habitat

The impacts will be limited along the SR 99 corridor. Previous road projects and agricultural activities have significantly altered the land proposed for the highway widening. The remaining habitat in the project area is very limited for use as wildlife habitat. Birds and small mammals use some of the fields, orchards and open grasslands. Amphibians, reptiles and fish use the waterways and the small riparian area along the Feather River.

The following impacts are expected to occur as a result of this project:

- Removal of riparian habitat at the Feather River and Nelson Slough. Most of the trees and willows were removed in previous projects.
- Take of winter foraging grounds for migratory birds (this impact is addressed in further detail under the Endangered and Threatened Species section).
- Ground disturbance during construction could lead to the introduction of noxious weeds. This impact is not expected to be significant since the area is already inundated with non-native vegetation.
- Loss of cultivated fields, orchards and grasslands
- Removal of trees, native and non-native, throughout the corridor.

There will be .61ha (1.5 ac) of riparian forest removed permanently and 2.0 ha (5.0 acres) impacted temporarily. In addition, less than one acre of wetland habitat will permanently and temporarily impacted (Table 3-9). This project is not expected to increase habitat fragmentation previously caused by agricultural land uses, existing roadway and urbanization.

Table 3-7 – Pacific Flyway and Riparian Habitat Impacts

Resource		Alternative 1 ha (acre)	Alternative 2 ha (acre)	Alternative 3 ha (acre)
Pacific Flyway Habitat		66.3 (164)	83.3 (206)	43 (106)
Wetlands				
	Permanent	.22 (.56)	.22 (.56)	.22 (.56)
	Temporary	.14 (.342)	.14 (.342)	.14 (.342)
Riparian Wetlands				
	Permanent	.61 (1.5)	.61 (1.5)	.61 (1.5)
	Temporary	2.0 (5.0)	2.0 (5.0)	2.0 (5.0)

Noxious Weeds/Invasive Species

A recently signed Executive Order, EO 13112, directs federal agencies to combat the introduction or spread of invasive plant species in the United States. In response to this EO, FHWA is requiring an analysis of the risk for any federal funded action to cause or promote the introduction or spread of invasive species.

The amount and type of noxious weeds and invasive species is not expected to increase more than the existing pre-construction condition. Following construction the slopes, bare areas and bioswales will be revegetated with native grass and herb species. Following construction and after a period of time, the affected area should be closer to a natural habitat condition than what currently exists.

Habitat Fragmentation

This project is not expected to increase habitat fragmentation more than the pre-construction condition. The SR 99 corridor has been significantly altered in the last 150 years and the habitat that remains is already fragmented. There will be some take of riparian habitat at the Feather River Bridge at both the north and south ends of the bridge. The previous bridge construction and subsequent widening project already cleared a wide swath of riparian vegetation and fragmented the habitat.

Pacific Flyway/Winter Foraging Habitat

There will be acquisition, or in some areas modification, of habitat used by birds migrating along the Pacific Flyway. The acquisition will result in the conversion of croplands, open grassy roadside, irrigation canals and rice fields to highway, shoulder and new recovery zones. The estimated take will be 42.8 ha (106 ac) within the project study limits.

Feather River Wildlife Area

Caltrans has an easement under the existing bridge and will be working with the Department of Fish and Game to widen the easement. Under previous widenings, Caltrans has compensated the Department of Fish and Game for the loss of land. Within the new easement will be a new bridge parallel to the existing bridge. There will be some loss of riparian habitat at Nelson Slough and the Feather River.

Caltrans is proposing to use 12.1 ha (30 ac) for a temporary construction staging area and access for the new bridge between the levees. Caltrans is only proposing to permanently acquire 0.8 ha (2.0 ac) of land for the actual bridge location. These same 12 ha (30 ac) were used previously for staging during the widening of the existing Feather River Bridge.

There will be temporary impacts to the wildlife area between the levees during construction. Temporary impacts include the presence of large heavy equipment, materials, personnel, etc. Ground disturbance, other than the placement of the bridge piers, is expected to be temporary, occuring during construction of the bridge. Because the duration of construction is expected to exceed one season the construction materials will be removed in the fall, as the area is in a flood plain. Environmentally Sensitive Areas have been designated to protect sensitive resources. The area will be revegetated per specifications by DFG.

All Build Alternatives

Level of Impact:

- Adverse impact.
- This impact is considered significant under CEQA.

No-Build Alternative

Level of Impact:

- No Impacts.

3.7.3 Mitigation

Natural Habitat

Caltrans will work with the Department of Fish and Game to develop onsite and offsite mitigation for the loss of riparian forest habitat. Mitigation will be proposed for direct and indirect impacts to listed species. The project biologist will work with the design engineers to avoid as many trees as possible and to minimize the loss of riparian habitat. The biologist will also work with landscape to incorporate additional tree planting as part of the landscape for trees removed during construction.

Noxious Weeds

Caltrans will implement standard weed control specifications for the construction period. Following construction, the project biologist will work with the landscape department to develop a mitigation plan that will include intensive replanting of native vegetation.

The proposed revegetation measures for all disturbed soils, including the use of native species, soil amendments and "weed free" mulch reduces the risk of introducing noxious weeds.

Pacific Flyway/Winter Foraging Habitat

Caltrans will consult with the Department of Fish and Game to determine the exact value of the habitat present in the project area and to establish mitigation for the loss of habitat. Some mitigation measures that have been proposed for similar losses include putting cropland into a conservation easement or converting lands to natural wetlands. Most mitigation will be obtained through mitigating for Giant Garter

Snake and Swainson's Hawk. The biologist will work with the design engineers to modify the design and limit the impacts to this habitat.

Feather River

Caltrans is proposing the permanent acquisition of 0.8 ha (2.0 ac) of The Feather River Wildlife Area from the Department of Fish and Game. In accordance with the Section 4(f) consultation, the Department of Fish and Game will be compensated for the acquisition. Following the Federal Highway Administration approval of the Programmatic 4(f), the Department of Fish and Game will be compensated the fair market value of the land and improvements. Caltrans is prepared to mitigate permanent acquisition at a ratio of 2:1. Because the temporary impacts are considered long-term impacts (since it is expected that construction will last for a minimum of three seasons), Caltrans has proposed onsite restoration of the 12 ha (30 ac) and an additional compensation at 1.5:1 for the long term temporary impacts.

Table 3-8-Summary of DFG Mitigation Compensation

IMPACT	HA(AC)	PROPOSED COMPENSATION RATIO	TOTAL COMPENSATION
Permanent	0.8 (2)	2:1	1.6 (4ac)
Temporary	12.1 (30)	1.5:1	30 acres onsite restoration Compensation at a value of 6 ha (15 ac)
TOTAL			7.7 ha (19 ac)

During consultation with the Department of Fish and Game, Caltrans proposed several compensation methods for the additional 7.7 ha (19 acres), including the following:

1. Pay directly to the Department of Fish and Game the fair market value of 7.7 ha (19 acres), or

2. Contribute the pro-rated 7.7 ha (19 acre) value towards the purchase of a larger parcel, or

3. Purchase riparian credits at an established bank at the nearest available location to the project, or

4. Establish a conservation easement in the interest of the Department of Fish and Game at an adjacent parcel for the pro-rated value of the 7.7 ha (19 acres).

Please see Appendix D for the Programmatic Section 4(f) Evaluation.

All Build Alternatives

Level of Impact After Mitigation:

- Less than adverse impact.
- This impact is considered less than significant under CEQA.

3.8 Special Status Species

Special Status species are plants, animals and fish which are considered rare, threatened and/or endangered within the State or region by local, state and/or federal resource conservation agencies. These agencies include the US Fish and Wildlife Service (USFWS), National Oceanographic Atmospheric Administration (NOAA Fisheries), California Department of Fish and Game (CDFG) and the California Native Plant Society (CNPS). These agencies protect and manage special status species and potential special status species under the guise of federal Endangered Species Act (ESA), California Endangered Species Act (CESA), California Fish and Game Code, and the California Native Plant Protection Act.

3.8.1 Affected Environment

The project area, which has been extensively disturbed by agriculture, is characterized by fragmented pockets of natural habitat. The largest remnants are located along the Feather River and Nelson Slough. Due to this fragmentation, the potential for the occurrence of special status species has been greatly compromised. To identify species of potential concern, Caltrans consulted State and Federal sensitive species lists and the California Natural Diversity Database (CNDDB, 2001). The following annotated table lists special status species, which may occur or are present in the project area. Many of species listed have not been observed in the project area, but potential habitat is present.

Table 3-9 - Special Status Species Known or Potentially Occurring Within The Project Area

03-Sut-99

Taxa	Scientific Name	Common Name	Federal/State/ CDFG/ CNPS	Distribution	Habitat Requirements	Habitat Present in Project Area
AMPHIBIANS	*Ambystoma californiense*	California Tiger salamander	FSC/ CSC/ Protected	Central Valley up to approximately 305m. From Butte County south to Santa Barbara County	Small ponds, lakes or vernal pools in grass-land and oak woodlands for larvae; rodent burrows, rock crevices or fallen logs for summer dormancy	No
	Rana aurora draytonii	California red-legged frog	FT/CSC/Protected	Occurs west of the Sierra-Cascade crest and along the Coast Ranges the entire length of the state, usually below 1200m.	Inhabits quiet pools of streams, marshes and occasionally ponds. Prefers shorelines with extensive vegetation	No
	Rana boylii	Foothill yellow-legged frog	FSC/ CSC/ Protected	Occurs in the Klamath, Cascade, North Coast, South Coast and Sierra Nevada Ranges up to approximately 1,830 m.	Creeks or rivers in woodlands or forests with rock and gravel substrate and low overhanging vegetation along the edge; usually found near riffles with rocks and sunny banks	No
	Scaphiophus hammondii	Western Spadefoot toad	FSC/ CSC/ Protected	Throughout the Central Valley and adjacent foothills. Elevations of occurrence extend from sea level to 1363m.	Primarily in grassland situations, occasionally in valley-foothill hardwood woodlands	No
BIRDS	*Agelaius tricolor*	Tricolored blackbird	FSC/CSC/FWS:MN BMC	Permanent resident in the Central Valley from Butte County to Kern County. Breeds in other scattered locations like Lake, Sonoma and Solano Counties.	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails. Habitat must be large enough to support 50 pairs. Requires large foraging areas like marshes, where insect prey is abundant.	Yes
	Ardea herodias	Great Blue Heron	/CSC//	Common throughout north America, often in lowland riparian areas	Often found in riparian areas iand nests in large snags. Feeds on snakes, small fish, frogs rodents and sometimes other birds	Yes
	Athene cunicularia	Burrowing owl	FSC/CSC/FWS:MN BMC	Lowlands throughout California, including the Central Valley and coastal areas.	Level, open, dry, heavily grazed or low stature grassland with available burrows.	Yes
	Branta canadensis leucopareia	Aleutian Canada goose	Delisted/	Winters in Butte sink, Los Banos, Modesto and Delta before migrating north to breeding grounds	Roosts in large marshes, flooded fields, stock ponds and reservoirs. Forages in pastures, meadows and harvested grainfields	Yes
	Buteo regalis	Ferruginous hawk	FSC/CSC/FWS:MN BMC	Does not nest in California. Winter visitor along the coast, eastward to Sierra Nevadas.	Open terrain in plains and foothills where ground squirrels and other prey are available.	Yes
	Buteo swainsoni	Swainson's hawk	ST	Lower Sacramento and San Joaquin Valleys, Klamath Basin and Butte Valley. Highest nesting densities near Davis and Woodland.	Nests in oaks or cottonwoods in or near riparian habitats. Forages in grasslands, irrigated pastures and grain fields.	Yes

	Charadrius montanus	Mountain plover	FPT/CSC/FWS:MNBMC	Winter resident from September through March. Found in the Central Valley from Sutter and Yuba Counties southward	Found on short grasslands and plowed fields. Frequents open plains with low, herbaceous or scattered shrub vegetation	Yes
BIRDS	*Coccyzus americanus occidentalis*	Western yellow-billed cuckoo	FC/SE/FWS:MNBMC	Nests along the upper Sacramento River, lower Feather River, South Fork of the Kern and Colorado Rivers	Wide, dense riparian forests with a thick understory of willows for nesting; sites with a dominant cottonwood overstory are preferred for foraging	Yes
	Epidonax trailii	Willow flycatcher	SE/FWS:MNBMC	Summers along the western Sierra Nevada, in Trinity, Shasta, Tehama, Butte and Plumas County	Riparian areas and large wet meadows with abundant willows. Usually found in riparian habitats during migration	No
	Epidonax trailii brewsteri	Little willow flycatcher	FSC	West of Sierra Nevada crest	Summer resident in wet or moist meadow and montane riparian habitats 2000 to 8000 feet.	No
	Falco peregrinus anatum	American peregrine falcon	Delisted/SE/Fully protected/	Permanent resident along the north and south coast ranges. Winters in the Central Valley south through the Transverse range	Nests and roosts on protected ledges of high cliffs, usually adjacent to lakes, rivers or marshes that support large prey populations	No
	Grus canadensis tabida	Greater sandhill crane	Fully Protected	Breeds in Siskiyou, Modoc, Lassen, Plumas and Sierra Counties. Winters in the Central Valley south to the Colorado River Indian Reserve.	Summers in open terrain near the shallow lakes or freshwater marshes. Winters in plains and valleys near bodies of fresh water.	Yes
	Haliaeetus leucocephalus	Bald eagle	FT/SE/Fully Protected	Nests in most northern California Counties. Winter range includes the rest of California except deserts and very high altitudes.	In western North America, nests and roosts in coniferous forests within 1.6 km of a lake, reservoir, stream or ocean.	Yes
	Nycticorax nycticorax	Black-crowned night heron	None	Throughout most of California	Marshes and shores, roosts in trees.	Yes
	Plegadis chihi	White-faced ibis (rookery site)	FSC/CSC/FW:MNBMC	Breeds at Honey Lake, near Woodland, Yolo County. Winters along Sac River in Colusa, Glenn, Butte, Sutter and Yolo.	Freshwater marshes with tules, cattails, and rushes. May nest in trees and forage in flooded agricultural fields, especially rice.	Yes
BIRDS	*Riparia riparia*	Bank swallow	ST	Breeding populations are along the Sacramento River from Tehama County to Sacramento County and along the Feather and Lower American Rivers.	Nests in bluffs or banks, usually adjacent to water, where the soil consists of sand or sandy loam.	Yes
BEETLES	*Anthicus sacramento*	Sacramento anthicid beetle	FSC	Restricted to a dune area at mouth of Sacramento River,; dunes near Rio Vista, Ord Ferry Bridge,	Sand slip-faces among willows.	No
	Anthicus antiochensis	Antioch Dunes anthicid beetle	FSC	Grand Island and in and around Sandy Beach Park, Sac Co.	Loose sand on sand bars and sand dunes	No
	Cicindela hirticollis abrupta	Sacramento Valley tiger beetle	FSC	Lower Sac. Valley (i.e., Sacramento and lower American river, and Cache Creek)	Found in sandy areas among willows in riverine and riparian habitats	No

	Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	FT	Riparian habitats throughout the Central Valley	Specifically associated with Sambucus sp.	No
FISH	*Acipenser medirostris*	Green sturgeon	FSC\CSC	Large rivers from San Francisco Bay north	Prefers channel bottoms in river systems	Yes
	Hypomesus transpacificus	Delta smelt	FT\ST	Sacramento/San Joaquin River Estuary, Suisun Bay	In the euryhaline zone, moving to freshwater to spawn	No
	Lampetra ayresi	River lamprey	FSC\CSC	Sacramento/San Joaquin River systems	Small freshwater tributary streams	Yes
	Lampetra tridentata	Pacific lamprey	FSC\CSC	San Francisco Bay, Sacramento/San Joaquin River systems	Breeds in freshwater streams and rivers.	Yes
	Oncorhynchus mykiss	Central Valley steelhead	FT	Sacramento Rivers and tributaries	Cool freshwater streams and rivers, require sand and gravel for spawning	Yes
	Oncorhynchus tshawytscha	Central Valley fall-run Chinook salmon/critical habitat	C\CSC	Southern California north to Alaska.	Migrate with a minimum water depth of 18cm. They spawn in cool, clear, well-oxygenated streams.	Yes
	Oncorhynchus tshawytscha	Sacramento River winter-run chinook salmon	FE\SE	Spawns only in the Sacramento River	Spawns in cold water above the Red Bluff Diversion Dam	No
FISH	*Oncorhynchus tshawytscha*	Central Valley spring-run chinook salmon	FT\ST	Sacramento and San Joaquin Rivers and their tributaries.	Spawns in deep water and large gravel size. Most spawning and rearing activity take place in the main stream channels. Critical habitat, Central Valley spring-run chinook salmon	Yes
	Pogonichthys macrolepidotus	Sacramento splittail	FT	Central Valley and the Sacramento-San Joaquin estuary	Primarily freshwater and found in the slow-moving sections of rivers and sloughs	Yes
	Spirinchus thaleichthys	Longfin smelt	FSC\CSC	Occur at the mouth of the Klamath River and in the Sacramento-San Joaquin estuary	Occupy mostly the middle or bottom of the water column in the salt or brackish water portions. Spawning takes place in freshwater over sandy-gravel.	No
INVERTEBRATES	*Branchinecta conservatio*	Conservancy fairy shrimp	FE	Disjunct occurrences in Solano, Tehama, Butte, and Glen Counties	Large, deep vernal pools in annual grasslands	No
	Branchinecta lynchi	Vernal pool fairy shrimp	FT	Central Valley, Central and South Coast Ranges from Tehama County South	Common in vernal pools; also found sandstone rock outcrop pools	No
	Lepidurus packardi	Vernal pool tadpole shrimp	FE	Shasta county south to Merced County	Vernal pools and ephemeral stock ponds	No

	Linderiella occidentalis	California linderiella		Central Valley, Central and South Coast Ranges from Mendocino County to Ventura County	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions	No
Mammals	*Corynorhinus (=Plecotus) townsendii townsendii*	Townsend's big-eared bat	FSC/CSC/-/-/-	Coastal regions from Del Norte County south to Santa Barbara Co.	Roosts in caves, tunnels, mines, and dark attics of abandoned buildings; very sensitive to disturbances	No
	Dipodomys californicus eximius	Marysville Heermann's kangaroo rat	FSC/CSC/-/-	Sutter Buttes, Sutter County; could be extinct	Grasslands and sparse, chaparral habitats above the valley floor on slopes with well-drained soils	Yes
	Myotis yumanensis	Yuma myotis bat	FSC/-/-/-	Common and widespread in California. Range from sea level to 3300m	Closely tied to bodies of water. Open forests and woodlands are optimal habitats	Yes
Reptiles	*Clemmys marmorata marmorata*	Northwestern pond turtle	FSC/CSC/Protected/-	Oregon border south along the coast to San Francisco Bay, inland through the Sacramento Valley, and the western slope of Sierra Nevada.	Woodlands, grasslands, and open forests; occupies ponds, marshes, rivers, with muddy or rocky bottoms and with cattails, or other aquatic vegetation.	Yes
	Thamnophis gigas	Giant garter snake	FT/ST/Protected/-	Central Valley from Fresno north to the Gridley/Sutter Buttes area	Sloughs, canals, and other small water ways where there is a prey base of small fish and amphibians; requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding in winter	Yes

FE: Federal Endangered **C**: Federal Candidate **FT**: Federally Threatened **FSC**: Federal Species of Concern **FPT**: Federally proposed Threatened **SE**: State-listed as Endangered **ST**: State-listed as Threatened **CSC**: California Special Concern species (This is a DFG term) **Fully Protected**: Cannot be taken without a permit from the Fish and Game Commission **MNBMC**: Migratory Nongame Birds of Management Concern **WBG-** High Priority: imperiled or at risk for imperiled

BIRDS

Tricolored Blackbird (*Agelaius tricolor*) (Federal Species of Concern, California Species of Special Concern, and Migratory Nongame Bird of Management Concern). The tricolored blackbird is common throughout the Central Valley and it breeds near freshwater, preferably in emergent wetlands. While foraging habitat is widely available throughout the project area, no birds were observed within the project area.

Great Blue Heron (*Ardea herodias*) (California Species of Special Concern). Blue Heron is common throughout California and frequents shallow estuaries, freshwater and saline emergent wetlands, riverine settings, ponds, and less often on rocky marine shores, in croplands, pastures and irrigation ditches.

The roadside ditches in the project area may provide marginal foraging habitat for the Great Blue Heron. Single individuals were observed foraging in the project area during surveys on 12/98, 6/01, 7/01. Nest searches for the heron were conducted 4/99 and 7/01. No heron rookeries were detected in the project area during surveys.

Burrowing Owl (*Athene cunicularia hypugea*) (Federal Species of concern, California Species of Special Concern). The burrowing owl is a year-round resident of the Central Valley. Burrowing owls are found in grassland, prairie, savanna, and open areas near human habitation including golf courses and airports. The agricultural fields in the project area may provide some foraging and nesting habitat for the burrowing owl. No birds were detected in the project area during surveys.

Aleutian Canada Goose (*Branta canadensis leucopareia*) (Delisted species). The Aleutian Canada goose is a widespread migrant common to the Central Valley in the winter. This species breeds primarily outside of California but there are known breeding populations in the central coast counties and the northeastern plateau.

The project area, predominately the southern portion (segment 1), provides winter foraging habitat for this species. This species does not breed in the Central Valley, therefore there is no breeding habitat within the project area.

Ferruginous Hawk (*Buteo regalis*) (Federal Species of Concern, California Species of Special Concern). The Ferruginous Hawk are infrequent migrants to the Central Valley. They inhabit open grasslands, sagebrush flats, desert scrub and open valleys with adjacent woodland.

The project area contains foraging habitat for wintering Ferruginous Hawks. Although the project area contains suitable habitat for this species, breeding habitat would not be impacted.

Swainson's Hawk (*Buteo swainsoni*) (California Threatened Species). This species is a summer migrant to the Central Valley that arrives on its nesting grounds in March. The Swainson's hawk nests in deciduous trees between 6'-70' above ground, but usually 20'-30'. This species nests in a platform built of large sticks, twigs, brambles, grass, and etc., and may re-use nests year to year.

The landscape surrounding the project area provides excellent foraging habitat for the Swainson's hawk. Adults were observed foraging within the project limits during the 1998, 2000 and 2001 field seasons. There is a nesting pair located just outside of the project area on Striplin Road.

There are other locations within the project area, which may support tree stands that are good candidates for nesting. Surveys for nests were conducted in the spring of 1999 and the summers of 2000 and 2001. Findings were limited to the nest on Striplin Road (Figure 3-3a-c).

Mountain Plover (*Charadrius montanus*) (California Species of Special Concern and Federally proposed threatened). This is a species of bird which inhabit shortgrass prairie and shrub-steppe landscapes. The Mountain plover, a shortgrass praire species, migrates to California and overwinters in equivalent grasslands and shrub. Cultivated fields, alkali flats and other agricultural lands especially after cultivation and plowing best mimic the preferred habitat of this species (Federal Register, Tuesday, Feb 16, 1999. Vol. 64, No. 30).

The southern portion of the project area (Segments 1 and 2) provide ideal habitat for this species. Although there are no reported sightings within the project area, the California Wildlife Habitat Relationships System write-ups and maps state and show Yuba County as wintering range for this species.

Western Yellow-Billed Cuckoo (*Coccyzus americanus occidentalis*) (candidate to be listed under the federal Endangered Species Act and is listed as endangered under the California Endangered Species Act). The cuckoo is an uncommon to rare summer resident of valley, foothill, and desert riparian habitats in scattered locations throughout California.

Greater Sandhill Crane (*Grus canadensis tabida*)(California Threatened/Fully protected species). These species are typically found in wet meadows and fresh emergent wetlands. Greater Sandhill Cranes winter in the Sacramento and San Joaquin valleys south into Kings County. It can be found in the winter in rice and corn stubble fields, flooded rice fields and various fresh emergent wetland habitats.

Figure 3-3a – Impacts to Swainson's Hawk and Giant Garter Snake Habitat Segment 1

Figure 3-3b – Impacts to Swainson's Hawk and Giant Garter Snake Habitat Segment 2

Figure 3-3c – Impacts to Swainson's Hawk and Giant Garter Snake Habitat Segment 4

This species is likely to be in the project area during the winter months. Greater Sandhill Cranes have been seen in rice fields adjacent to the project area during field surveys in January and February of 2001.

Bald Eagle (*Haliaeetus leucocephalus*) (Federal Endangered, California Endangered and California fully protected species). Bald Eagles are likely to be within and/or near the project area during the fall and winter months. These species tend to prefer perching high in large, stoutly limbed trees over foraging territory. They will hunt fish, waterfowl and small mammals. Surveys for the presence of this species were conducted on 4/99 by sight and listening for responses to recorded songs. No Bald Eagles or nests were seen during field surveys.

Black-Crowned Night Heron (*Nycticorax nycticorax* This bird is a fairly common yearlong resident in lowlands and foothills throughout most of California, and common locally in large nesting colonies. The roadside ditches in the project area may provide marginal foraging habitat for the Black-Crowned Night Heron. Nest searches for the heron were conducted 4/99, summer of 2000 and 2001. No heron rookeries were detected in the project area during surveys.

White-faced ibis (*Plegadis chihi*) (Federal Species of Concern and California Species of Special Concern). This species is common throughout the central valley. The white-faced ibis nests in extensive marsh areas, usually among the tules and sometimes on mounds. This species was not seen in the project area during surveys; however, foraging habitat does exist.

Bank Swallow (*Riparia riparia*) (California Threatened). The bank swallow is a migrant found primarily in riparian and other lowland habitats and 75% of the breeding population in California is concentrated on the banks of Central Valley streams. At the time of the surveys (1998, 2000 and 2001) the banks did not appear to provide the suitable nesting habitat for this species. However, the project area does have foraging habitat.

FISH

Green Sturgeon (*Acipenser medirostris*) (Federal Species of Concern and California Species of Special Concern). Green Sturgeon are located from California north to Alaska and into parts of Russia. The Green Sturgeon migrates and spawns in both Feather and Sacramento Rivers. The project area provides migratory passage to

spawning grounds and may provide spawning habitat. Although data is sparse, young green sturgeons have been found as far north as the Red Bluff diversion dam.

River Lamprey (*Lampetra ayresi*) (Federal Species of Concern and California Species of Special Concern). This anadromous fish is found in coastal streams from San Francisco Bay to Lynn Canal in Alaska. River lamprey spends most of their time in the estuary type environment. It is assumed that the River Lamprey occurs at some point in their life cycle in the Feather River.

Pacific Lamprey (*Lampetra tridentata*) (Federal Species of Concern and California Species of Special Concern). This species has been found in the Cache Slough, Suisun Bay, American River and the Sacramento River up to the Red Bluff Diversion Dam. The Pacific Lamprey is a parasitic anadromous species, which spawns in riffle areas of freshwater streams.

It is assumed that the Pacific Lamprey occurs in the Feather River and its tributaries. Although the project area does not provide spawning habitat, the Feather River may serve as a migratory route.

Central Valley Steelhead (*Oncorhynchus mykiss*) (Federally threatened species). Central Valley Steelhead occur within the lower and upper reaches of the Sacramento River as well as the American, Feather and Yuba Rivers and their tributaries. Sensitive salmonid species likely use the waters of the Feather River and Nelson slough (during high flows) as migration routes to holding and spawning grounds. Hatchlings are known to disperse from spawning grounds into smaller tributaries before beginning the downstream run. Juvenile salmonids leave the non-natal rearing habitat during the spring as water levels drop and water temperatures rise. Individuals could be within the Feather River portion of the project area at any time and in Nelson Slough during the high flow periods of the season.

The remaining drainages including the lower reaches of Coon Creek and Ping Slough, according to NOAA Fisheries and CDFG, do not contain suitable habitat for salmonids. Both drainages are tributary to the Natomas Cross Canal system, and the Natomas Main Canal system, located just southwest of the project area. These canal systems are not equipped with fish screens to prevent salmonids from reaching the drainages in the project area. A future project by the Natomas Mutual Water Company is proposing a project that will involve the removal of diversion dams within the canal system, as well as placing state of the art fish screens for the canal

diversion at the Sacramento River to prevent the straying and entrapment of sensitive fish species within the canal system.

Spring-Run Chinook Salmon/Winter Run Chinook Salmon/Fall-Late Fall Chinook Salmon (*Onorhynchus tshawytscha*) (Federally and State threatened; Federally and State endangered). These species are potentially present in any passable waters tributary to the Sacramento and San Joaquin Rivers. The two waterbodies identified as having potential habitat include The Feather River at all times of the season and Nelson Slough during the high flows of the season.

Outmigrating smolts may pass through the Feather River portion of the project area at any time of the year. During their downstream migration when flows are high, young salmon may use the floodplain habitat in the action area as rearing habitat. Nelson slough contains good riparian cover and rearing habitat but it is limited to the high flow periods of the season and is typically dry during the late summer months.

Mammals

Townsend's Big-eared bat (*Coryorhinus townsendii*) (Federal Species of Concern and California Species of Special Concern). The Townsend's Big-eared bat day roosts in natural or man-made cavity roosts. Habitat attributed to this bat species in the form of open tree cavities, rock overhangs, and abandoned buildings are few and do not show signs of occupancy. The existing Feather River Bridge does not demonstrate signs of bat usage.

Yuma myotis (*Myotis yumanensis*) (Federal Species of Concern). This species forages over open water, as well as roosts in caves, crevices, buildings, and under bridges. This species may occur in abandoned buildings throughout the project area. There were no signs of bat habitation under the Feather River Bridge. There are no caves or rock outcroppings with crevices habitat in project area.

Marysville Heermann's kangaroo rat (*Dipodymys californicus eximus*)(Federal Species of Concern and California Species of Special Concern). This species feeds on seeds of grasses, forbs and shrubs as well as berries and seeds of lupine, burclover and wild oats. This species may occur within the project area.

Reptiles

Western Pond Turtle (*Clemmys marmorata marmorata*)(Federal Species of Concern and California Species of Special Concern). Historically, the western pond turtle had

a relatively continuous distribution from the Columbia River drainage in Washington to northern Baja California. The turtle is currently threatened by impacts to nesting areas by livestock and agriculture and the introduction of exotic predatory species.

Coon Creek, Ping Slough and Nelson Slough, as well as irrigation ditches in the project area provide slack or slow water aquatic habitat that may potentially provide habitat for the western pond turtle. However, the main stem of the Feather River is not likely to provide habitat through most of the year. The backwater area at the south end of the bridge is prime habitat for this species. The sloughs, with the exception of Nelson Slough, and irrigation canals are not likely to provide breeding habitat because they lack the sandy substrate in the adjacent uplands. The Feather River and Nelson Slough contain potential breeding habitat.

Giant Garter Snake (*Thamnophis gigas*) (Federal and State Threatened Species). The present known distribution extends from the vicinity of Gridley, Butte County, to the vicinity of Burrel, Fresno County.

The giant garter snake prefers streams and sloughs with mud bottoms. It is usually found in areas of freshwater marsh and low gradient streams, although they frequent temporary water such as drainage canals and irrigation ditches.

Ping Slough, Coon Creek and Nelson Slough all provide potential habitat for the Giant Garter Snake. In addition to the mentioned bodies of water there is also potential habitat within roadside ditches which contain water and are hydrologically connected to rice fields and other habitats such as sloughs or the Feather River (Figure 3-3a-c).

Sensitive Plant Species

Brittlescale (*Atriplex depressa*) (1B on the CNPS listing). Brittlescale is an annual herb that blooms from May to October. This plant was not found during field surveys and is unlikely to occur within the project area due to the lack of clay and alkali soils, which are essential for their propagation within the project area.

Rose Mallow (*Hibiscus lasiocarpus*) (CNPS List 2 species). Rose mallow is a perennial herb in the mallow family. This species is found on moist riverbanks and low peat islands in sloughs. The closest recorded occurrence is .32 km (.2 miles) west of the project area. This sighting was in the vicinity of the Sutter Bypass and

Gilsizer Slough (Rarefind, 1997). Botanical surveys conducted between March and June 1999 did not indicate the presence of this plant.

Veiny monardella (*Monardella douglasii ssp. venosa*) (CNPS listing 1B list, Federal Species of Concern). The veiny monardella is an annual herb that is found in heavy clay soils associated with grassland habitat and is primarily in Butte, Sutter and Tuolomne County.

This species was not found during surveys and is unlikely to exist within the project area since the grassland area within the project area is highly inundated with competitive non-native species. While there are some clay soils within the project area, none of the soils are categorized as "heavy clays." There are no known occurrences of this species within the project area.

Hartweg's Golden Sunburst (*Psuedobahia bahifolia*) (State and Federal Endangered species, CNPS 1B list). This species is an annual herb, which blooms from March to April. There are fewer than 20 occurrences and none are in or near the project area. The Hartweg's Golden Sunburst was not found during surveys conducted in 2001. This species is unlikely to occur within the project due to development, agriculture, and overgrazing.

3.8.2 Impacts

Species addressed in this section pertains to those identified in the project surveys as being present or have high probability of occurring in the project area. Survey methods and additional information can be found in the Natural Environmental Study.

Impact criterias define the level of direct and indirect impacts on special-status species. The purpose of establishing impact criteria is to determine when an impact is adverse under NEPA and significant under CEQA.

Impacts on special status species were considered significant if implementation of the proposed project would meet any of the following specific criteria. Would the proposed project cause:

Direct mortality, substantial reduction in local population size, lowered reproductive success, habitat fragmentation or substantial loss of breeding/nesting habitat of:

- Plants and animals qualifying as rare and endangered under CEQA,

- Plants and wildlife that are state or federally listed threatened or endangered species, or proposed for listing
- Plants listed under CNPPA or plants listed under CNPS as considered "rare threatened or endangered in California".
- Category 1 or 2 candidates for possible future listing under FESA.

Substantial portions of local populations of state and federal wildlife species of special concern?

Table 3-10 - Summary of Potential Special-Status Species Occurrences within the Project Area

Scientific Name	Common Name	Legal Status[a]	Potential Project Impacts[b]
BIRDS			
Andrea herodias	Great Blue Heron	CSC	Potential impact
Agelaius tricolor	Tricolored blackbird	FSC, CSC	Potential impact
Branta canadensis	Aleutian Canada goose	Delisted	Potential impact
Buteo regalis	Ferruginous hawk	FSC, CSC	Potential impact
Buteo swainsoni	Swainson's hawk	ST	Potential impact
Charadrius montanus	Mountain plover	FPT, CSC	Potential impact
Coccyzus americanus occidntalis	Western yellow-billed cuckoo	SE	Potential impact
Haliaeetus leucocephalus	Bald eagle	FT, SE	Potential impact
Grus canadensis tabida	Greater Sandhill Crane	Fully Protected	Potential impact
Plegadis chihi	White-faced ibis	FSC, CSC	Potential impact
Riparia riparia	Bank swallow	ST	Potential impact
REPTILES			
Clemmys marmorata marmorata	Northwestern pond turtle	FSC, CSC	Potential impact
Thamnophis gigas	Giant garter snake	FT, ST	Potential impact
FISH			
Acipenser medirostris	Green sturgeon	FSC, CSC	Potential impact
Lampetra tridentata/Lampetra ayresi	Pacific lamprey/River lamprey	FSC, CSC	Potential impact
Oncorhynchus mykiss	Steelhead	FT	Potential impact
Oncorhynchus tshawytscha	Chinook salmon (winter run), critical habitat	FE, SE	Potential impact
Oncorhynchus tshawytscha	Chinoon salmon (fall/late fall run)	C, CSC	Potential impact
Oncorhynchus tshawytscha	Chinook salmon (fall/late fall run), critical habitat	C, CSC	Potential impact
Oncorhynchus tshawytscha	Chinook salmon (spring run)	FT, ST	Potential impact
INSECTS			
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	FT	Potential impact
MAMMALS			
Dipodomys Californicus eximus	Marysville Heermann's kangaroo rat	FSC, CSC	Potential impact
Eumops perotis californicus	Greater western mastiff bat	FSC, CSC	Potential impact

Myotis ciliolabrum	Small-footed myotis bat	FSC	Potential impact
Myotis evotis	Long-eared myotis bat	FSC	Potential impact
Myotis thysanodes	Fringed myotis bat	FSC	Potential impact
Myotis volans	Long-legged myotis bat	FSC	Potential impact
Myotis yumanensis	Yuma myotis bat	FSC	Potential impact
Perognathus inoratus	San Joaquin pocket mouse	FSC	Potential impact
Plecotus townsendii	Pacific western big-eared bat	FSC, CSC	Potential impact
PLANTS			
Hibiscus lasiocarpus	Rose Mallow	CNPS 2	Potential impact
Monardella douglassii var. vensoa	Veiny mondardella	FSC, CNPS 1B	Potential impact
Pseudobahia bahifolia	Hartweg's golden sunburst	FE, SE, CNPS 1B	Potential impact
Atriplex depressa	Brittlescale	CNPS 1B	Potential impact

[a] **Legal Status Codes:**
Federal
FE – Listed as Endangered under the Federal Endangered Species Act.
FPE-Proposed as Endangered under the Federal Endangered Species Act.
FT-Listed as Threatened under the Federal Endangered Species Act.
FPT-Proposed as Threatened under the Federal Endangered Species Act.
C-Candidate Taxa that are candidates which may become a proposed species.
FSC-Taxa that may be endangered or threatened, however, there is not enough biological information that has been gathered to support listing at this time.
State
SE-Listed as Endangered under the California Endangered Species Act.
Fully Protected-Cannot be taken without a permit from the Fish and Game Commission.
ST-Listed as Threatened under the California Endangered Species Act.
CSC-State species of special concern.
CNPS Inventory Status
List 1B: Plants that are rare, threatened or endangered in California and elsewhere.
List 2: Plants that are rare, threatened or endangered in California, but more common elsewhere.
[b] **Potential Project Impact:**
Potential Impact-Habitat was identified in the study area that could be utilized by the species, but no actual presence of any individuals was found.
Impact-Species was found within the study area during the surveys and may be affected by the proposed project.

3.8.2.1 Impact Discussion

Tricolored Blackbird (*Agelaius tricolor*)

Although foraging habitat is widely available throughout the project area, the sloughs and ditches within the project area do not support the dense emergent wetland vegetation required by the tricolored blackbird for nesting. While foraging habitat does occur within the project area, impacts would be temporary within the project vicinity. All alternatives have the same potential impacts.

Level of Impact:

- Less than adverse impact.
- This impact is considered less than significant under CEQA.

Great Blue Heron (*Ardea herodias*):

The roadside ditches in the project area may provide marginal foraging habitat for the Great Blue Heron. The emergent wetland adjacent to the Feather River provides optimum habitat both for nesting and foraging. Single individuals were observed foraging in the project area during surveys on 12/98, 6/01, and 7/01. Nest searches for the heron were conducted 4/99 and 7/01. No heron rookeries were detected in the project area during surveys. The project may adversely affect the Great Blue Heron if a rookery develops within the project area.

Level of Impact:

- Potentially adverse impact.
- This impact is considered significant under CEQA.

Burrowing Owl (*Athene cunicularia hypugea)*

The agricultural fields in the project area may provide foraging and nesting habitat for the burrowing owl. While foraging and nesting habitat may be present in the project area, agricultural practices such as tilling and flooding during the breeding period may impede nesting. No individuals were detected during the survey season. Some of the fallow areas, which change annually, may be able to support burrowing habitat for the owl. No owls were detected during surveys on 4/99 or during the 2001 survey season. The project may adversely affect this species if found breeding in the area.

Level of Impact:

- Potentially adverse impact.
- This impact is considered potentially significant under CEQA.

Aleutian Canada Goose (*Branta canadensis leucopareia*)

Implementation of the proposed project would result in the conversion of rice fields currently used by this species and other migratory waterfowl. Species use of the project area is limited to the winter months when construction is not occurring. Therefore, the impacts upon the species are limited to habitat loss. This impact is associated predominantly within the southern portion of the project area. Impacts to foraging habitat would be similar for all build alternatives. This species does not

breed in the Central Valley and is not found within the area during the proposed construction season.

Level of Impact:

- Less than adverse impact.
- This impact is considered less than significant under CEQA.

Ferruginous Hawk (*Buteo regalis*)

The implementation of the proposed project may result in the temporary loss of foraging habitat; however, this species breeds outside of California, so nesting habitat will not be affected. This species utilizes the same foraging habitat as the Swainson's Hawk, which is present within and near the project area. This species is typically found in the Central Valley Region during the winter months. Construction will occur from late spring to early fall; therefore, not occurring when the species is present.

Level of Impact:

- Less than adverse impact.
- This impact is considered less than significant under CEQA.

Swainson's Hawk (*Buteo swainsoni*)

The landscape within and surrounding the project area provides excellent foraging habitat for the Swainson's hawk, particularly Segments 1 and 2 (southern end of the project area) where agriculture is not dominated by orchards. Presence of adults was confirmed during field surveys. There is one active nest site approximately 10 meters outside of the project area. Impacts vary by alternatives. Alternative 2 has the most impacts with the potential take of 62 ha (152 ac). Alternatives 1 and 3 take 49 ha (120 ac) and 51 ha (126 ac), respectively. Conservation guidelines suggest that any loss of foraging habitat within 16 km (10mi) radius of an active nest would require mitigation (CDFG, 1994).

Level of Impact:

- This impact is considered significant under CEQA.

Mountain Plover (*Charadrius montanus*)

The Mountain plover is unlikely to occur in the northern half of the project area where the agriculture land use is primarily orchards. The southern half of the project, (Segments 1 and 2), provides suitable habitat for this species. Impacts are similar in all the build alternatives. Although there are no reported sightings within the project area, the California Wildlife Habitat Relationships System write-ups and maps show Yuba County as wintering range for this species. This species is typically found in the Central Valley Region during the winter months. Construction will occur from late spring to early fall; therefore, not occurring when the species is present.

Level of Impact:

- Less than adverse impact.
- This impact is considered less than significant under CEQA.

Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*)

Implementation of this proposed project would result in possible impacts to Western Yellow-billed Cuckoo foraging habitat. There are no known nests within the project area; however, this species may forage within Nelson Slough or the backwater of the Feather River (present at the south end of the bridge). Impacts are similar on all the build alternatives.

Level of Impact:

- Potentially adverse impact.
- This impact is considered potentially significant under CEQA.

Greater Sandhill Crane (*Grus canadensis tabida*)

The implementation of the proposed project may result in the temporary loss of foraging habitat. Impacts to foraging habitat would be similar in all build alternatives. This species is present in the vicinity of the project area during the winter months and has been seen within the project area during the winter. Construction will occur from late spring to early fall; therefore, not occurring when the species is present.

Level of Impact:

- Less than adverse impact.
- This impact is considered less than significant under CEQA.

Bald Eagle (*Haliaeetus leucocephalus)*

Segments 1 and 4 (including all three alternatives) do not provide suitable breeding or typical foraging habitat for this species. Segment 2, the river may provide incidental foraging but is not likely a prime source for foraging. Although there are large snags that could provide nesting and perching habitat for the Bald Eagle, the project area does not contain prime breeding habitat. The project will not be removing potential nesting trees.

Level of Impact:

- The project may affect but is not likely to adversely affect bald eagle.
- The project is expected to result in a less than significant impact for Segments 1 and 4. Under the existing conditions the project is not expected to result in a significant impact to this species.

Black-crowned Night Heron (*Nycticorax nycticorax*)

The implementation of the proposed project may result in the temporary loss of foraging habitat and breeding habitat. Impacts to habitat would be similar in all build alternatives. Work in the riparian habitat may affect individuals nesting within the area.

Level of Impact:

- This impact is considered potentially significant under CEQA.

White-faced Ibis (*Plegadis chihi*)

The implementation of this proposed project may result in the loss of foraging habitat. Foraging may occur within the Feather River area, the sloughs rice fields and

irrigation ditches. There are no extensive tule marshes within the project area so it is unlikely that breeding habitat would be impacted.

Level of Impact:

- This impact is considered potentially significant under CEQA.

Bank swallow (*Riparia riparia*)

The implementation of this proposed project would result in temporary loss of foraging habitat. Riverine environment (such as degraded riverbanks) within the project limits do not appear to provide the habitat suitable for this species.

Level of Impact:

- Less than adverse impact.
- This impact is considered less than significant under CEQA.

Green Sturgeon (*Acipenser medirostris*)

Implementation of the proposed project may directly impact green sturgeon. The loss of green sturgeon is not expected to substantially reduce the local population. Cofferdam construction, pile driving and temporary structures in the Feather River may temporarily disrupt the movement of this species and its habitat. Take of habitat will be limited to the placement of piers (0.2 ha/0.5 ac) for the new bridge, this habitat loss is not a substantial percentage of the total amount of habitat available to this green sturgeon. Impacts are similar in all build alternatives.

Level of Impact:

- The project is not likely to adversely affect this species.
- This impact is considered less than significant under CEQA.

Central Valley Steelhead (*Oncorhynchus mykiss*) and Chinook Salmon (*Oncorhynchus tshawytscha*)

Implementation of the proposed project would potentially impact listed salmonids. While these riverine environments do not have adequate spawning habitat, they may

provide "non-natal rearing habitat" for these sensitive species particularly during high flows. Impacts are similar in all build alternatives. This species could be adversely impacted by implementation of this project, primarily during the installation and dewatering of the cofferdams during the construction of Segment 2. There will be loss of 0.11 ha(0.277 ac) of instream habitat. Habitat has only been identified at the Feather River and Nelson Slough meaning that impacts to the species are limited to construction of Segment 2.

Level of Impact:

- Adverse impact.
- This impact is considered significant under CEQA.

Essential Fish Habitat for Fall-run Chinook salmon

NOAA Fisheries has identified the Feather River and Nelson Slough as EFH for fall-run Chinook salmon. The project may adversely affect EFH, however the impacts will be minimized through water quality measures, BMPs and habitat restoration within the project area or adjacent to the project area.

River Lamprey (*Lampetra ayresi*) and Pacific Lamprey (*Lampetra tridentata*)

The implementation of the proposed project may temporarily impact this species. The loss of individuals is not expected to substantially reduce the local population. Although it is unlikely that the project area provides spawning habitat, the area may serve as a migration corridor. Since work will occur in the river when the water is at is lowest level, it is unlikely that work will occur during the spawning period of this species. Impacts would be similar in all the build alternatives.

Level of Impact:

- The project is may adversely affect this species
- This impact is considered potentially significant under CEQA.

Townsend's Big-eared bat (*Coryorhinus townsendii*) and Yuma myotis (*Myotis yumanensis*)

Implementation of the proposed project may result in the possible loss of habitat for the Townsend's Big-eared Bat. Abandoned buildings slated for removal or other buildings with eaves and attics may provide habitat for bats. Further surveys of buildings slated for removal will need to be conducted after an alternative has been selected.

Level of Impact:

- Potentially adverse impact.
- This impact is considered potentially significant under CEQA.

Marysville Heermann's Kangaroo rat (*Dipodymys californicus eximus*)

The implementation of this proposed project may impact this species. Although this species was not found during surveys, several predators were observed, therefore leading to the belief that there is suitable habitat for this species and similar species. The project is not expected to substantially reduce the local population. Impacts will be similar in all the build alternatives.

Level of Impact:

- The project is not likely to adversely affect this species
- This impact is considered less than significant under CEQA.

Western Pond Turtle (*Clemmys marmorata marmorata*)

Implementation of the proposed project may result in the loss of a small quantity of habitat for turtles. This loss will be a result of the placement of new bridge piers within and adjacent to the Feather River. The Feather River and Nelson Slough contain potential breeding habitat that may be temporarily impacted during construction. The two areas are surrounded by sandy upland habitat, described under typical breeding habitat for this species. Construction activities may result in the disturbance and relocation of adult turtles and possible damage to nests within the work area.

Level of Impact:

- Adverse impact.

- This impact is considered significant under CEQA.

Giant Garter Snake (*Thamnophis gigas*)

Ping Slough, Coon Creek and Nelson Slough all provide potential habitat for the Giant Garter Snake. The backwater area at the south end of the bridge may be suitable habitat for this species. In addition to the mentioned bodies of water there is also potential habitat within roadside ditches that contain water and are adjacent to rice fields or hydrologically connected to other habitats like the sloughs or the river. Habitat includes the aquatic habitat as well as upland habitat within 200 feet of the aquatic area. The project may adversely impact this species including take of habitat and mortality to individuals. Following consultation with USFWS regarding the effects of the proposed project on GGS it was determined that Alternative 3, the selected alternative, will have the following adverse effects on GGS habitat:

Table 3-11- Giant Garter Snake Impacts

SPECIES/ HABITAT	TYPE OF IMPACT	PRE-CONSTRUCTION DRILLING HECTARES (AC)	SEGMENT 1 HECTARES (AC)	SEGMENT 2 HECTARES (AC)	SEGMENT 4 HECTARES (AC)
Giant Garter Snake *Aquatic* Habitat	*Temporary* Permanent	0(0)* 0(0)	0.180 (0.072) 0.146 (0.059)	0 (0) 0.227(0.686)	0 (0) 0.18(0.436)
Giant Garter Snake *Upland* Habitat	*Temporary* Permanent	21.92(54.15) 0(0)	9.13(22.551) 1.93(4.759)	0 (0) 24.40(60.30)	0 (0) 5.89(14.56)

**There will be temporary disturbance to this species as a result of the drilling activity; but no take of habitat.*

Impacts on the giant garter snake may include potential mortality and temporary disturbance of habitat as a result of construction activities related to the roadway widening and the construction of the Feather River new bridge. Due to the extended length of time that construction will be occurring within the Feather River Wildlife Area, habitat take may be considered substantial and may need to be mitigated at a greater level than those of temporary effects.

Level of Impact:

- Adverse impact.

- This impact is considered significant under CEQA.

3.8.3 Mitigation

Federal Candidate Species/ Federal Species of Concern, State Special Concern Species

Tricolored Blackbird (*Agelaius tricolor*), Black-crowned Night Heron (*Nycticorax nycticorax*), White-faced Ibis (*Plegadis chihi),* Great Blue Heron (*Ardea herodia),* Burrowing Owl (*Athene cunicularia hypugea)*

To reduce the potential impact to nesting birds, surveys will be conducted to establish presence. If active nests are found, nest removal will be limited to outside the breeding period. Tree removal will be limited to a period following fledging of chicks, which occurs between late July and early August. The breeding window on average is between early February 1 to July 15, which complies with the Migratory Bird Treaty Act. Habitat removal will be limited to only what is necessary to construct the project and as much vegetation as possible will protected with ESAs.

Level of Impact With Implementation of Avoidance, Minimization and Mitigation Measures:

- Less than adverse impact.
- This impact is considered less than significant under CEQA.

Federal Species of Concern, State Threatened or State Endangered - No Breeding Habitat Present

Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*),

There is suitable habitat within the vicinity of the project area, however it is expected that the habitat within the project area is used for foraging. Foraging habitat, near the Feather River bridge would be temporarily unavailable during construction. To reduce the potential impact to nesting birds, surveys will be conducted to establish presence. If active nests are found, nest removal will be limited to outside the breeding period. Tree removal will be limited to a period following fledging of chicks, which occurs between late July and early August. The breeding window on

average is between early February 1 to July 15, which complies with the Migratory Bird Treaty Act. Habitat removal will be limited to only what is necessary to construct the project and as much vegetation as possible will be protected with ESAs.

Level of Impact With Implementation of Avoidance, Minimization and Mitigation Measures:

- Less than adverse impact.
- This impact is considered less than significant under CEQA.

Wintering Migratory Birds

Aleutian Canada Goose (*Branta canadensis leucopareia*), Ferruginous Hawk (*Buteo regalis*), Greater Sandhill Crane (*Grus canadensis tabida*),
Mountain Plover (*Charadrius montanus*),

Implementation of the proposed project would result in the permanent conversion of approximately 43 ha (106 ac) of agricultural rice fields and other habitats considered part of the Pacific flyway which is currently used by migratory waterfowl. The table below summarizes the impacts.

Resource	Alternative 1 ha (ac)	Alternative 2 ha (ac)	Alternative 3 ha (ac)
Pacific Flyway	66 (164)	83 (206)	43 (106)

The following measures will be implemented to reduce the impact to less-than significant levels:

- Implement mitigation measures associated with Giant Garter snake (discussed later in the mitigation section) and Swainson's hawk
- Prepare a revegetation plan using native plant species

Level of Impact With Implementation of Avoidance, Minimization and Mitigation Measures:

- Less than adverse impact.
- This impact is considered less than significant under CEQA.

Swainson's Hawk (*Buteo swainsoni*)

Implementation of the proposed project is expected to result in the loss of 18ha (45 ac) of agricultural fields including fallow rice, row crops and pastureland which are considered suitable habitat. The following tables (Tables 3-11 a-b) summarize the impact to Swainson's Hawk habitat by alternative and is broken down by segment for the preferred alternative.

Table 3-11a Swainson's Hawk Impact by alternative

Alternative	Alternative 1 ha (ac)	Alternative 2 ha (ac)	Alternative 3 ha (ac)
Swainson's Hawk Habitat	49 (120)	62 (152)	18 (45)

Table 3-11b Alternative 3 – Swainson's Hawk Impact by Segment

SEGMENT	SEGMENT 1	SEGMENT 2	SEGMENT 4
Swainson' s hawk permanent habitat removal	7.7 ha (19 ac)	8.9ha (22 ac)	1.76 (4 ac)
Swainson' s hawk temporary habitat removal	14.5ha (36 ac)	1.76 ha (4 ac)	1.5 ha (3.6 ac)

Coordination is being initiated with the Department of Fish and Game to determine the effects of the proposed project on this species. The following measures are included as methods of avoidance and minimization:

- Surveys will continue after the selection of an alternative to determine if there are new nests or if the habitat has been modified in a manner that would change the impacts of the project
- Construction activity will be avoided within .40 km (.25 miles) of any known active nests between March 1 and August 15 unless the chicks fledge earlier then August 15. If construction cannot be avoided, then the Department of Fish and Game will be contacted for further direction.
- Loss of potential foraging habitat (any habitat, which occurs within 16.1 km (10 miles) of an active nest,) will be mitigated at a 1:1 ratio unless otherwise specified during consultation. A mitigation bank may be used for restoration credit as long as it has the following minimum criteria outlined in the Mitigation Guidelines for Swainson's Hawk in the Central Valley of California.

Level of Impact With Implementation of Avoidance, Minimization and Mitigation Measures:

- Under the current scope and existing conditions of the project area, this impact is considered less than significant under CEQA.

Green Sturgeon (Acipenser medirostris), Pacific Lamprey (Lampetra tridentata), River Lamprey (Lampetra ayresi)

The following protective measures will be utilized to avoid or reduce impacts to these species

- Work windows prescribed for listed salmonids will minimize impacts to these species.
- Water quality measures as outlined in the water quality section will be implemented.
- A fish salvage plan, generally requested for the Biological Assessment (For USFWS) will also help protect and minimize impacts to the Green Sturgeon, Pacific Lamprey and River Lamprey.

Level of Impact With Implementation of Avoidance, Minimization and Mitigation Measures:

- Less than adverse impact.
- This impact is considered less than significant under CEQA.

Central Valley Steelhead (*Oncorhynchus mykiss*), Chinook Salmon (*Oncorhynchus tshawytscha*),

Additional mitigation measures have been outlined in the Biological Opinion and are summarized below.

NOAA Fisheries believes the following reasonable and prudent measures are necessary and appropriate to avoid or minimize take of Central Valley spring-run Chinook salmon or Central Valley steelhead:

Measures shall be taken to avoid or minimize injury to Central Valley spring-run Chinook salmon or Central Valley steelhead during bridge construction.

Measures shall be taken to avoid or minimize impacts to aquatic habitat during bridge construction, culvert replacement, and continued use of the highway.

Terms and Conditions

FHWA and Caltrans are responsible for compliance with the following non-discretionary terms and conditions that implement the reasonable and prudent measures described above:

Measures shall be taken to avoid or minimize injury to Central Valley spring-run Chinook salmon and Central Valley steelhead during bridge construction.

A fish salvage plan shall be written by Caltrans and approved by NOAA Fisheries prior to bridge construction. The plan shall be coordinated with a biologist from the NOAA Fisheries, Sacramento Area Office, before it is undertaken, and must be implemented by a qualified fishery biologist using approved methodology. If listed fish are found within the area confined by the cofferdam, prior to dewatering, the fishery biologist shall use one or more of the following NOAA Fisheries-approved gears to capture the fish: dip net, siene, throw net, minnow trap, or hand. The biologist shall note the number and condition of individuals and the date and time of collection and relocation, and submit this information to NOAA Fisheries, Sacramento Area Office. Any capture and relocation, mortality, or other incidental take of Chinook salmon or steelhead must be reported within 48 hours to NOAA Fisheries by telephone (916) 930-3600, or fax (916) 930-3629. No incidental take of Central Valley spring-run Chinook salmon is expected or authorized; therefore, if Chinook salmon are taken, NOAA Fisheries will review the activities resulting in take to determine if additional protective measures are required.

Pile driving shall be conducted only during daylight hours to avoid crepuscular and nocturnal migration periods of Chinook salmon and steelhead.

Underwater sound levels associated with pile driving shall be monitored to ensure sound levels do not exceed 150 dB at a distance of 10 meters from the pile. If sound levels do exceed this threshold, pile driving must stop and NOAA Fisheries must be notified within 48 hours by telephone at (916) 930-3600, or by fax at (916) 930-3629. Before pile driving may continue, additional protective measures will be determined by NOAA Fisheries and Caltrans; these measures may include monitoring to determine the presence or absence of salmonids in the area, and changing the pile driving intensity or duration.

Measures shall be taken to avoid or minimize impacts to aquatic habitat during bridge construction, culvert replacement, and continued use of the highway.

FHWA and Caltrans shall ensure that BMPs are employed during construction to avoid and minimize disturbance to the river banks and channel to the maximum extent possible including, but not limited to, the BMPs described in Appendix F of the biological assessment and in a conceptual SWPPP.

The final bridge design shall be provided for NOAA Fisheries' review and approval and shall include specifications regarding areas where riparian vegetation will be removed and replanted, chemical treatment and storage location of construction materials, identification and uses of staging areas, type and source of construction materials to be placed in the stream channel, types and timing of activities to occur directly in the channel and on the banks, and details of the clean-up process and removal of materials from the site. NOAA Fisheries must approve of final design and specifications at least 90 days prior to constructions.

Removal of riparian vegetation shall be avoided as much as possible, and replacement shall occur at a 3:1 ratio on-site or within close proximity on the Feather River. When the riparian restoration plan is completed a copy shall be sent to NOAA Fisheries at the following address:

Supervisor, Protected Resources Division
National Marine Fisheries Service
Sacramento Area Office
650 Capitol Mall, Suite 8-300
Sacramento, CA 95814

The bridge and adjacent highway design shall not allow stormwater from any road or bridge surface to be directly discharged to any drainage during construction and in perpetuity.

Stream channel disturbance shall be kept to a minimum, and no extraneous construction material shall be left in the channel. If bridge footings are to be protected by rock, the channel bottom elevation must not be elevated above the natural channel bottom. No fill material, including concrete, beyond that identified in the project description, shall be allowed to enter any waters of the U.S. In-channel construction materials must be non-toxic to aquatic life.

Water pumped from within the confines of cofferdams which may be turbid shall not be allowed to re-enter the stream channel unless sediment has settled out, resulting in no increase in turbidity in any water of the U.S. Water that contact wet concrete and has a pH greater than 9 must be disposed of outside the stream channel and away from the riparian zone or any wetland area.

During construction, all equipment refueling and maintenance shall occur outside the channel and riparian area, except for the drill rig or other stationary equipment. To minimize the potential for fluid leaks during operation, refueling, or maintenance, spill control absorbent material shall be placed under all stationary equipment. Any spill of hazardous material must be reported to NOAA Fisheries within 48 hours by telephone at (916) 930-3600, or by fax at (916) 930-3629.

Level of Impact With Implementation of Avoidance, Minimization and Mitigation Measures:

Even with mitigation, impacts on fish migratory patterns and habitat quality would be adverse affected.

- Potentially adverse impact
- This impact is considered less than significant under CEQA.

Townsend's Big-eared bat (*Coryorhinus townsendii*)
Yuma myotis (*Myotis yumanensis*)

Any buildings that will be removed for construction of this project will be surveyed. If there are any signs that bats may use the building it will be further surveyed to determine if it is a maternal colony roost. If a maternal colony is present then one of two things will occur: 1) either the building will be removed following breeding season and prior to the start of the next or 2) exclusionary measures will be implemented so that the building may be removed during the breeding season without individuals being present.

Level of Impact With Implementation of Avoidance, Minimization and Mitigation Measures:

- Less than adverse impact.
- This impact is considered less than significant under CEQA.

Marysville Heermann's Kangaroo Rat (*Dipodymys californicus eximus*)

No mitigation measures are outlined for this species. This is not a listed species and literature reviews and phone conversations yielded no information about possible minimization measures. It is expected that mitigation for Swainson's Hawks habitat will also provide habitat for this species.

Level of Impact With Implementation of Avoidance, Minimization and Mitigation Measures:

- Less than adverse impact.
- This impact is considered less than significant under CEQA.

Western Pond Turtle (*Clemmys marmorata marmorata*)

To reduce the potential impact on pond turtles, a qualified biologist on site would conduct a pre-construction survey at the start of construction in areas outlined as habitat (Coon Creek, Nelson Slough, Ping Slough, the backwater area of the Feather River and the various irrigation ditches as well as the upland habitat adjacent to these areas). These surveys will be continuous throughout construction as work begins at each of the identified locations. If a turtle is found in the project area, the biologist will try to passively move the turtle out of the area by creating disturbance in the water. If a turtle becomes trapped during any work, the biologist will relocate the turtle to a downstream location. Water quality measures (required in general and for other species) will minimize the long-term impacts to this species and the establishment of ESAs will keep equipment in a limited work area which will minimize the long-term impacts to this species.

Level of Impact With Implementation of Avoidance, Minimization and Mitigation Measures:

- Less than adverse impact.
- This impact is considered less than significant under CEQA.

Giant Garter Snake (*Thamnophis gigas*)

1. Both upland and aquatic habitat including rice fields and habitat lost at irrigation canals and sloughs will be compensated for at a ratio of 1:1 conservation ratios for temporary effects and 3:1 for permanent effects.

2. Construction activities in giant garter snake habitat will be limited to May 1 through October 1.

3. The biologist/environmental monitor will conduct a survey for giant garter snake within 24 hours of the start of construction in identified habitat. No giant garter snake can be handled without obtaining prior approval from the Service. If a snake becomes trapped during construction, a USFWS pre-approved biologist will remove the snake to a downstream location. The USFWS will be notified of the presence of the snake within 24 hours.

4. The project shall be re-inspected whenever a lapse in construction activity of 2 weeks or greater has occurred.

5. Any dewatered habitat must remain dry for at least 15 days after April 15 and prior to excavating and filling.

6. All construction personnel shall participate in a USFWS-approved worker environmental program to learn about the species, its habitat and the relevant laws.

7. Movement of heavy equipment to and from the project site shall be restricted to established roadways or areas surveyed by the guidelines above and after May 1.

8. Following construction, areas of temporary disturbance shall be returned to their pre-project conditions; Revegetation will be with native species as noted in the conservation measures.

Level of Impact With Implementation of Avoidance, Minimization and Mitigation Measures:

- Less than adverse impact.
- This impact is considered less than significant under CEQA.

3.9 Floodplains

Executive Order 11988 for Floodplain Management directs federal agencies to refrain from conducting, supporting, or allowing an action in a floodplain unless it is the only practicable alternative. The FHWA requirements for compliance are outlined in 23 CFR 650 Subpart A. An encroachment into a floodplain is defined as "as action within the limits of the 100-year floodplain," with the 100-year floodplain being

defined as "the area subject to flooding by the flood or tide which has a one percent chance of being exceeded in any given year." The National Flood Insurance Program (NFIP) produces maps, which identify 100-year flood areas, based on local hydrology, topology, precipitation, flood protection measures and other scientific data. This program is administered by the work for Federal Emergency Management Agency (FEMA).

3.9.1 Affected Environment

The majority of the project, with the exception of the crossing of the Feather River, is located in Zone X "Areas Protected by Levees From 100 year Flood" (Figure 3-4). Therefore, with the exception of the Feather River crossing, none of the proposed work will encroach upon an established base floodplain. However, FEMA based floodplains are present where SR99 crosses the Feather River (Figure 3-4). This is depicted on Flood Insurance Rate Maps (FIRMs) for Sutter County (Community Panel numbers 060394-0150B, 060394-0200B, 060394-0250D, 060394-0255B).

Figure 3-4 - Floodplains

3.9.2 Impacts

The following criterias were used to evaluate if impacts resulting to floodplain conditions in the project area would be adverse under NEPA and significant under CEQA. Would the proposed project:

- Substantially alter the existing drainage pattern of the site or area or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or offsite?
- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage system?
- Place within a 100-year flood hazard areas structures that would impede or redirect flood flows?
- Expose people or structures to a substantial risk of property loss, injury or death involving flooding?
- Interrupt or terminate a transportation facility, which is needed for emergency vehicles or provides a community's only evacuation route?

3.9.2.1 Impact Discussion

A new bridge would be constructed east and parallel to the existing Feather River Bridge on SR 99 to accommodate northbound traffic. According to the Caltrans Floodplain Hydraulic Study dated 8/28/2001, this construction would constitute a transverse encroachment into the 100-year floodplain at the proposed site of the new bridge. The impact would be similar for all build alternatives. Temporary encroachment would consist of falsework and a temporary platform to accommodate bridge construction. Permanent encroachments would occur where new piers are placed for the Feather River Bridge. In compliance with 23 CFR 650.111, the following information is offered regarding these encroachments:

- The risks associated with this action are low. There are no risks of a flood overtopping the roadway and/or properties within this encroachment.
- Impacts on natural and beneficial floodplain values would consist of temporary loss of riparian vegetation due to excavation for piers and abutments.
- The proposed project would not support incompatible floodplain development.
- The proposed action would not constitute a significant encroachment as defined in 23 CFR 650.105.

- Measures to minimize floodplain impacts would consist of designing the new piers for minimum head loss and placing in line with the piers of the existing bridge. This would minimize the effect on the base flood water surface elevation at the encroachment location.
- Measures to restore and preserve the natural and beneficial floodplain values are not deemed necessary, since the riparian vegetation would naturally recolonize the impacted areas after the removal of the falsework and platform.

Build Alternatives

Level of Impact:

- Less than Adverse
- This impact is considered less than significant under CEQA.

No-Build Alternative

Level of Impact:

- No Impacts.

3.9.3 Mitigation

None is required.

3.10 Parks, Recreational Areas, Wildlife and Waterfowl Refuges

3.10.1 Affected Environment

The SR 99 corridor in Sutter County has been significantly altered over the last 150 years from settlement, agricultural practices and industrialism. In the past, the Central Valley was a vast area of grassland and variable woodland. Riparian corridors were marked with gallery forests of cottonwoods, valley oaks and willow. There are limited areas within the project area that still contain what would be considered natural habitat.

The Feather River State Wildlife Area (Figure 3-5 a-b) lies between the Feather River levees, adjacent to both sides of the Feather River Bridge. This wildlife area is approximately 1020 ha (2,522 ac) in size and is managed by the Department of Fish and Game. The habitat consists of riparian vegetation with valley oaks, willows and cottonwoods. Both Nelson Slough and the Feather River run through this area.

3.10.2 Impacts

The proposed project would utilize 12.1 ha (30 ac) for a temporary construction staging area and access for the new Feather River bridge between the levees. These same 12.1 ha (30 ac) were used previously for staging during the widening of the existing Feather River Bridge. Caltrans is proposing to permanently acquire 0.81 ha (2.0 ac) of land for the actual bridge location.

The following criterias are used to evaluate whether the proposed project would result in an adverse impact on parks, recreation areas, wildlife and water fowl refuges. Would the proposed project:

- Result in the use of any publicly owned land from a park, recreation area, or wildlife and waterfowl refuge, as defined by Section 4(f) of the U.S. Department of Transportation Act of 1966 (23 CFR 771.135).

3.10.2.1 Impact Discussion

This project would have permanent and temporary impacts on a publicly owned wildlife area. Construction activity constitutes the majority of the temporary impacts. Ground disturbance, placement of bridge piers, presence of large heavy equipment, materials, and personnel would be the prevailing activities found within the Wildlife area during this time period. In the event that the construction of the new bridge would take more than one season, then the construction materials and equipment would be removed in the fall. This is due to the flooding which may occur within the levees.

The Feather River Wildlife Area lies within the confines of the Feather River levees. The existing SR 99 Feather River Bridge passes through the wildlife area. The Programmatic Section 4(f) in Appendix D shows why the area cannot be avoided and discusses compensation alternatives. The permanent acquisition for placement and

future maintenance of the new bridge will be approximately 0.81 ha (2.0 ac). The temporary easement will be 12.1 ha (30 ac) within the confines of the Wildlife Area.

Figure 3-5a – Feather River Wildlife Area

Figure 3-5b – Impacts to Feather River Wildlife Area

3.10.3 Mitigation

Caltrans is proposing to acquire 0.81 ac (2.0 ac) and temporarily impact 12.1 ha (30 ac) of the Feather River Wildlife Area. Caltrans is prepared to mitigate permanent impacts at a ratio of 2 to 1 and temporary impacts at a ratio of 1.5 to 1.

In accordance with the Section 4(f) consultation, the Department of Fish and Game will be compensated for the acquisition. (See Appendix D for the Programmatic Section 4(f) Evaluation). Mitigation for the permanent and temporary impacts would minimize the impacts to the Wildlife Area.

Build Alternatives

Level of Impact:

- Less than Adverse.

No-Build Alternatives

Level of Impact:

- No Impacts.

3.11 Land Use, Planning and Growth

3.11.1 Affected Environment

Sutter County

Sutter County is situated in north central California in the Sacramento Valley, approximately 40 miles north of Sacramento. State Route (SR) 99, which extends in a north-south direction through the County, defines the principal transportation corridor connecting the County to the region. Sutter County is bound by Yolo and Colusa Counties to the west; Butte County to the north; Yuba and Placer Counties to the east with the Feather River and Bear Rivers forming the eastern boundary; and Sacramento County to the south. According to the Sutter County General Plan the county encompasses 388,358 acres of land of which 376,225 (96.8%) is zoned for agriculture uses.

Yuba City and Live Oak are the only two incorporated cites in the County. Yuba City is the urban development core of the County. There are seven Rural Community Areas designated in the Sutter County General Plan that could provide rural and suburban development. There is a comparative analysis of the relative amount of zoned acreage for the incorporated and rural development communities in Table 3-12.

Table 3-12 - Incorporated Cities and Rural Communities Zoned Acreage

Incorporated City	Area ha (acres)	Area km (sq.mi)
Yuba City	2290 (5,658)	22.89 (8.8414)
Live Oak	472 (1,167)	4.74 (1.8234)
Rural Communities		
Sutter	242 (599)	2.43 (.94)
Robbins	122 (302)	1.21 (.47)
Rio Oso	100 (246)	.98 (.38)
Nicolaus	14 (35)	.13 (.05)
Meridian	53 (132)	.52 (.20)
East Nicolas/Trowbridge	101 (249)	1.03 (.40)
Unincorporated Sutter County	**153,769 (379,970)**	**1537.7 (593.71)**
Sutter County Total	**157,163 (388,358)**	**1571.6 (606.81)**

Source: Sutter County Community Services Department (As of January 1, 1996)

There are two major industrial-commercial zoned areas slated for development in the county: an 1,800 acre Food Processing, Agriculture, and Recreational Combined (FARC) Area Plan located to the west of Yuba City, and a 10,500 acre Industrial/Commercial Reserve (IRC) located in the southerly portion of the county. These developments represent an unusual conversion of agriculturally zoned lands by the County.

Agriculture is the predominant land use in Sutter County with rice, orchards, and livestock grazing as the primary agricultural uses within and adjacent to the project area. The Sutter County General Plan designation for the lands along the project route is Intensive Agriculture. The zoning designation within this area is General Agriculture (A-G) with a minimum farm parcel size of 20 acres, and a minimum homestead size of one-acre (Figure 3-6).

Specific farmland uses in the project area include alfalfa and some grazing land to the south of the Feather River Bridge. There are melons, rice fields, and some orchards to the immediate north of the bridge and beyond and as the soil quality improves further to the north plums (prunes) and other tree crops such as peaches and walnuts are grown.

Figure 3-6 – Sutter County Landuse Map

There is a small Rural Development Community (the Nicolas Community) as defined by the County General Plan in close proximity to the project limits that forms the boundary and limit for any intrusion of development into the Agricultural lands of the area. Other regional patterns of land use and growth are expected to follow current established patterns; namely the planned development within the sphere of influence of Yuba City to the west of the city's current boundary and the commercial planned development in the most southerly portion of the County and other planned agricultural support locations.

3.11.2 Impacts

Criteria for Determining Significance under CEQA

The following criteria were used to evaluate the significance of land use impacts resulting from the proposed project. Would the proposed project:

- Create conflict with applicable land use plans, policies, or regulations of an agency with jurisdiction over the project adopted for the purpose avoiding or mitigating an environmental effect.

The proposed project would require varying amounts of new right of way. Alternative 3 would acquire the largest amount at 105.2 ha (260 acres). The other alternatives (1 and 2) would acquire 70.4 ha (174 acres) and 85.8 ha (212 acres) respectively. This acquisition would change the land use from the current intensive agriculture to highway use.

The Sutter County General Plan has seven goals in place to "preserve the high quality agricultural land for agricultural purposes." The policies are designed to protect the County's agricultural lands. The goals are contained in the Agricultural Resources section of the General Plan. It is not expected that any of the proposed alternatives would conflict with any of these policies.

There are six properties zoned commercial and residential. These properties that would be converted to highway use are not considered to amount to major changes in land use. Alternative 1 is the worst case scenario with four full acquisitions of commercial/industrial locations and two full acquisitions of residences.

These changes are not expected to alter current land use patterns in the project area. There is a small Rural Development Community (the Nicolaus Community) as

defined by the County General Plan in close proximity to the project limits that forms the boundary and limit for any intrusion of development into the Agricultural lands of the area. Other regional patterns of land use and growth are expected to follow current established patterns; namely the planned development within the sphere of influence of Yuba City to the west of the city's current boundary and the commercial planned development in the most southerly portion of the County and other planned agricultural support locations.

3.11.2.1 Consistency with Local Plans and Policies

The Sutter County General Plan Circulation Element recommends expansion of SR 99 from the SR 70 junction to Bogue Road. The Transportation and Circulation Element also includes statements that recognize the importance of making operational and safety improvements to SR 99 to provide a more efficient and safer transportation system.

No Build

The No Build Alternative would be inconsistent with the Sutter County General Plan's Transportation and Circulation Element, which recommends expansion of SR 99 from the SR 70 junction to Bogue Road.

Build Alternatives

Level of Impact**:**

- This impact is considered less than significant under CEQA.

3.11.2.2 Consistency with Regional Transportation Plans

SR 99 is an economic and agricultural lifeline through northern-central California. In the long term increased congestion on the route in the proposed project area would likely dampen the critical movement of goods and services along the route.

Caltrans' Transportation Concept Report (TCR) for the segment of SR 99 in the Project Area, recommends conversion to a four lane conventional highway with left hand turn pockets and acceleration and deceleration lanes where needed. The SACOG 2000/01 Metropolitan Transportation Improvement Program includes the widening and other improvements on SR 99 from the SR 70 junction to Garden

Highway as well as the portion from Central Avenue to O'Banion in the agencies most recent program list.

No Build Alternative

The No Build Alternative would be inconsistent with Caltrans' TCR for this highway and with the MTP adopted by SACOG.

Build Alternatives

Level of Impact**:**

- This impact is considered less than significant under CEQA.

3.11.3 Mitigation

None required.

3.12 Farmland/Agricultural Lands

3.12.1 Regulatory Setting

Farmland Protection Policy Act: The National Environmental Policy Act (NEPA) and the Farmland Protection Policy Act (FPPA, USC 4201-4209); and its regulations, 7 Code of Federal Regulations (CFR, Section VI, Part 658) require the lead, federal agency to coordinate with the Natural Resource Conservation Service (NRCS) to examine the effects of farmland conversion before approving any federal action. The coordination process is set forth in the act and, if adverse effects are found, the agency must consider alternatives to lessen the impacts.

Projects where farmland may be adversely affected require close coordination with the NRCS and the completion of a "Farmland Conversion Impact Rating" (Form AD 1006) or NRCS CPA-106 form, which was developed to address impacts, related to corridor-type projects. The Farmland Conversion Impact Rating form provides a basis for assessing the extent of farmland impacts relative to federally established criteria.

The Williamson Act of 1965 is the State's principal policy for the preservation of agricultural and open-space land. The program encourages landowners to work with local governments in order to protect important farmland and open-space. In doing

so, land is assessed for property taxes consistent with its actual use, rather than the potential value of the land. The main purposes of the Williamson Act are to preserve agricultural land and to encourage open space preservation and efficient urban growth.

The Williamson Act contains notification provisions (Government Code Section 51291(b)) that require state and local agencies to notify the Department of Conservation of the possible acquisition of Williamson Act contracted land.

At the county and local level agencies have general plan policies which emphasize preservation of existing land uses including farming, and cities and counties use adopted urban boundaries and subdivisions to direct development and rule out encroachment of urban use into farmland. The Sutter County General Plan contains specific policies aimed at conserving agricultural lands. The Plan notes that "Non agricultural home sites shall be limited to existing parcels and no new residential subdivisions shall be allowed in the agricultural areas." The Plan therefore indicates for each southern rural community, a community boundary that serves as the limit of non-agricultural growth. The Nicolaus community, cited in the previous section, is the only such rural community designated in proximity to the proposed project area.

3.12.2 Affected Environment

Agriculture forms the principal land use in the project area. The distribution of farmland soils along the project is presented in Figure 3-7. Farmland in the study area is devoted primarily to rice cultivation, various orchard crops, and pasture.

The Natural Resource Conservation Service (NRCS) classifies soils in eight classes ranging from Class I through Class VIII soils. The NRCS system of classification generally provides an indication of how suitable the soils are for agricultural use. Class I soils that have the fewest limitations for crop production, and the subsequent classes have progressively greater physical /natural limitations for agricultural use. Class I and II soils are generally considered prime farmland due to the excellent properties that these soils possess for higher yielding crop production.

The California Department of Conservation (CDOC) designates and maps farmlands in California based on the NRCS soil surveys and local land use data. Agricultural lands are classified as prime farmlands, farmlands of statewide importance, unique farmlands, farmlands of local importance and grazing lands. Table 3-13 provides a

description of these categories of farmlands and Figure 3-8 presents the distribution of these categories of farmlands within the project area.

Table 3-13 - Farmland Classification.

State Category	Formal Description
Prime Farmland	Land of the best combination of physical and chemical features for production of agriculture crops
Farmland of Statewide Importance	Land other than prime, which has a good combination of physical and chemical characteristic to produce crops. In addition, irrigated crop production within the last three years is a requirement to be classified in this category.
Unique Farmland	Lands which do not meet the criteria for Prime or Farmland of Statewide Importance, but are currently used to produce specific high economic value crops.
Farmland of Local Importance	Land*s* which do not qualify as Prime, Statewide Importance, or Unique farmlands but are currently irrigated, pasture land, or produce non-irrigated crops. This designation is also used for lands which have the potential of being Prime or of Statewide Importance if properly irrigated.

3.12.3 Impacts

The proposed project would result in an adverse and/or significant impact to farmlands if the project resulted in any of the following:

- Convert prime agricultural land to nonagricultural use or impair the agricultural productivity of prime agricultural land?
- Conflict with existing zoning for agricultural uses or a Williamson Act contract?

Figure 3-7 – Sutter County Soils Map

Figure 3-8 – Map of Farmlands in Sutter County

3.12.3.1 Impact Discussion

Farmland Impacts

A Farmland Conversion Impact Rating Form (NRCS-CPA-106) was completed for each alternative (Appendix F). For alternatives 1, 2, and 3 the ratings are 147, 149, and 139 points, respectively, out of a possible 260 points (Table 3-14). According to the Farmland Protection Policy Act (FPPA), project alternative site ratings that receive scores of less than 160 points should be given a minimum level of consideration for protection.

Table 3-14 - Farmland Site Assessment

Alternative	Land Converted ha (ac)	Relative Value of Farmland (Storie Index)	Corridor Assessment Criteria	Total Impact Rating
1	70.4 (174)	84	63	147
2	85.8 (212)	84	65	149
3	105.2 (260)	73	66	139

Source: NRCS-CPA-1006 (Farmland Conversion Impact Rating)

In addition, Table 3-15 summarizes the acreage of farmlands affected by the project alternatives. Estimated amounts of farmland conversion because for the new proposed right of way was determined by Caltrans North Region Design in consultation with Caltrans North Region Right of Way Engineering. Alternative 1 would convert approximately 70.4 hectares (ha) (174 acres (ac)) of farmland to new right of way (R/W). The 1997 Census of Agriculture (conducted by the USDA) reported 140,972 ha (348,349 ac) of land in farms in Sutter County. Using that number, the amount of acreage converted by Alternative 1 amounts to .049 percent of the total land in farms in Sutter County. Approximately 53.8 ha (133 ac) of the land thus converted would be prime or unique farmland and approximately 13.8 ha (34 ac) would be farmland of state or local importance. The Farmland Conversion Impact Rating for Alternative 1 is 147 points; completed forms for the proposed project area are provided in Appendix F.

Table 3-15 - Farmland Conversion by Alternative

Alternative	Land Converted ha (ac)	Prime & Unique Farmland ha (ac)	Farmland of Statewide Importance ha (ac)	Percentage of Farmland (County)	Relative Value of Farmland (Storie Index)
1	70.4 (174)	54 (133)	14 (34)	**.049	84
2	85.8 (212)	61 (150)	15 (38)	**.060	84
3*	105.2 (260)	51.2 (127)	25.4 (63)	**.074	73

Source: Form AD-1006 (Farmland Conversion Impact Rating)
*Reflects the larger right of way area.
**Percentages were calculated by using the Census of Agriculture data.

Alternative 2 would convert about 85.8 ha (212 ac) of farmland to Caltrans right of way, which represents about .060 percent of the land in farms in the County. Approximately 60.7 ha (150 ac) of this land would be prime or unique farmland, and about 15.4 ha (38 ac) would be farmland of state or local importance. The Farmland Conversion Rating for Alternative 2 is 149 points.

Alternative 3 would convert 105.2 (260 ac) of farmland to Caltrans right of way. This acreage represents .074 percent of the farmland in the County. Approximately 51.2 ha (127 ac) of this land would be prime or unique farmland, and approximately 25.4 ha (63 ac) would be farmland of state or local importance. The Farmland Conversion Rating for Alternative 3 is 139 points.

The increase in the estimated revised amount of farmland conversion for Alternative 3 (preferred alternative) was deemed unlikely to raise the rating enough to warrant reinitiating of the NRCS consultation process. NRCS agreed with the findings and signed a concurrence letter to reflect their position (Appendix F).

According to the Federal Farmland Protection Policy, sites that receive scores of less than 160 points should be given a minimum level of consideration for protection. The farmland conversion rating scores for Alternative 1, 2, and 3 are less than 160 points.

Build Alternatives

Level of Impact:

- Less than adverse.
- This impact is considered less than significant under CEQA.

No Build Alternative

Level of Impact:

- No Impact.

California Land Conservation (Williamson Act)

Sutter County participates in the California Land Conservation (Williamson Act) program. Although, they participate, there are no parcels affected by the proposed project.

Build Alternatives

Level of Impact:

- No Effect.
- This impact is considered less than significant under CEQA.

No Build Alternative

Level of Impact:

- No Impacts.

3.12.4 Mitigation

None required.

3.13 Community Impacts (Economic and Social), Pedestrian & Bicycle Facilities, Environmental Justice, Relocations

3.13.1 Affected Environment

State Route (SR) 99 is one of the most important Federal Aid highways to the economy of the state. It connects urban and rural areas, serving as a major access for products and people, and is also the main farm to market route for most of the agricultural products from the Central Valley. In northern central California, SR99 serves as the major commute freeway for the Yuba City, Chico, and Sacramento urban centers.

Within the project area, there is one small agricultural community with scattered residences along the state highway. The community of Tudor, which historically was a shipping point for local agricultural products, is situated along existing SR99 south of Yuba City. Currently the community is comprised of warehouses, vacant buildings, and some residences along its main road (SR 99). The community of Nicolaus is just east of SR99 and would not be directly affected by the project.

Based on reports from the Sacramento Area Council of Governments (SACOG), Sutter County population in 1999 was 76,700. Most of the population growth in the county took place in Yuba City, which had a net gain of 200 individuals for a 1999 total of 35,050. The population of Live Oak increased by only 25 in 1999, while the unincorporated area of the county increased by 75. In terms of population, Sutter County ranks 38th among California's 58 counties.

The population growth rate of the county has been slowing since 1991 and is expected to reach an average growth rate of 2.3 percent by the year 2010, down from 3.4 percent per year in the early 1990's. Population growth in Sutter County has lagged behind that of the state as a whole. The growth rate in Sutter County for the year 2000 is expected to be 0.5 percent, which is significantly below the anticipated 1.7 percent growth rate for the entire state.

Historical data from the 1990 Census indicates that Sutter County had a poverty rate 2.7 percent above the statewide rate. The Sutter County poverty rate for 1989 was 15.2 percent while the statewide rate was 12.5 per cent. The 1995 U.S. Department of Commerce statistics showed Sutter County at about a 16 percent poverty rate,

which was 0.5 percent higher than the California rate. The poverty rate is indicative of the percent of the population for whom poverty status has been determined.

The statewide per capita income rate increased from $16,409 in 1989 to $28,163 in 1998 per the Census and Department of Finance (DOF) data (an increase of 71.6 percent). A weaker national and California economy in the late 80's and early 1990's contributed to higher poverty and lower income rates. The Bureau of Labor Statistics indicates median household income of $33,775 for Sutter County for the year 2000, which is an increase of 24.6 percent over the median household income for the County reported in the 1990 Census.

In 2000, the study area's ethnic population was approximately 64% white, which is very close to the countywide percentage of 68%. Compared to the countywide population, the study area as shown in Table 3-16 was composed of smaller a percentage of African-Americans, Native Americans and a greater percentage of persons of Hispanic and Asian/Pacific Islander origins.

Table 3-16 - Population in the Project Area.

Area	Population	White	African - American	Native American	Asian/ Pacific Islander	Hispanic*	Other
Census Tract 510	2,464	63.6%	0.57%	0.89%	13.2%	27.4%	Not known
Census Tract 511 Block groups	74	83.7%	1.4%	4.1%	5.4%	10.8%	--------
Total	2,538	64.2%	0.59%	0.98%	13.09%	26.9%	--------
Sutter County	78,930	67.5%	1.9%	1.6%	11.3%	22.2%	--------

Sources: U.S. Census Bureau, Census 2000; SACOG Regional Census 2000 Data
** Hispanics may be of any race.*

Pedestrian and Bicycle Facilities

Pedestrian facilities within the project limits have a level of service that is often considered typical of a rural area. The population within the frontage area of SR 99 along the proposed project area is a very small rural population. Walking areas are generally on the dirt of paved portion of road beyond the paved shoulder, or "edge of pavement." There is an intersection and crosswalk at SR 99 and O'Banion Road.

Existing bike facilities within Sutter County are very limited. According to the Sutter Bikeway Plan a proposed system includes approximately 395 miles (635 km) of bikeway facilities. Facilities specifically within Sutter county include 8.3 miles (13.4 km) of Class I bikeways, 29.6 miles (47.6 km) of Class II bikeways and 172.2 miles (277.1 km) of Class III bikeways. As described within the plan, a Class I bikeway consists of a completely separated right-of-way for the exclusive use of bicycles and pedestrians with minimal crossflow traffic. A Class II bikeway utilizes bike route signs to identify routes which provide for shared use with pedestrian and motor vehicle traffic. SR 99 was not included as a route for any of the Bikeway Master Plan improvements and is considered a "shared facility."

Federal Uniform Relocation Assistance and Real Properties Acquisition Act

To ensure adequate relocation of people and businesses and a decent, safe, and sanitary home for displaced residents, the Federal Relocation Assistance and Real Properties Acquisition Act requires the provisions of relocation assistance payments and counseling to eligible displacees. All eligible displacees are entitled to moving expenses. Benefits and services are provided equitably to all relocatees without regard to race, color, religion, age, national origin, and disability as specified under Title VI of the Civil Rights Act of 1964 (Appendix G).

The potential displacement of houses and businesses in the study area is documented in the Draft Relocation Impact Report (DRIR) prepared for the proposed project (California Department of Transportation 2001). No final decisions on relocations would be made based on the DRIR alone. A Final Relocation Impact Report will be prepared after a preferred alternative has been selected. The final report would also establish like requirements for all displaced residents and businesses.

Title VI of the Civil Rights Act of 1964 and Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, signed by President Clinton on February 11, 1994, directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law.

Title VI of the Civil Rights Act of 1964 states that no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation

in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

According to Federal Highway Administration (FHWA) publication: *Guidance for "Addressing Environmental Justice in the Environmental Assessment/Impact Statement,"* a minority and/or low income population is defined as: "Any readily identifiable groups or clusters of minority persons and/or persons who are in the project study area. If the population is dispersed and not an identifiable minority or low-income community, then the study area population may be homogeneous."

Economic Conditions

The primary economic base in the area is comprised of agriculture, fruit packing, retail sales, and services. Today the availability of water plus long growing seasons makes lands in Sutter County a prime agricultural region. Over 93 percent of the County's land is classified as "Important Farmland", making it one of the most intensively farmed counties in California.

According to the July 2001 report by the California State University at Sacramento, Sacramento Forecast Project, total taxable sales have grown consistently since 1992. The average annual rate of increase in taxable sales between 1992 and 1998 was 5 percent. The report, sales tax data for the county for the year 2000 indicates a 14 percent annual increase in taxable sales; forecasts for years 2001 and 2002 indicate a slower growth rate of 6.5 percent per year. Table 3-17 shows the taxable transactions in 2000 for Sutter County. As the table indicates, general merchandise stores generate the most taxable sales in the County.

Table 3-17 - 2000 Taxable Transactions in Sutter County

Type of Retail Store	Permits	Total Transactions (1,000 of dollars)
Apparel Stores	37	$16,126
General Merchandise Stores	22	$177,554
Food Stores	79	$67,960
Eating and Drinking Places	134	$57,058
Home furnishings and appliances	63	$20,616
Bldg. Material & Farm Equipment	34	$103,482
Auto dealers and auto supplies	89	$122,503
Service Stations	21	$36,298
Other retail stores	342	$106,493

Retail Stores Totals	821	$708,920
All other outlets	1,118	$312,434
Totals all outlets	1,939	$1,020,524

Source: Board of Equalization, 2000.

Sutter County's total taxable sales is 0.23 percent of the total in California. The per capita taxable sales in Sutter County in 2000 was $12,929 in comparison with the California average of $12,815. The per capita income in Sutter County was $24,223 which ranked 27th in the state. This indicates that people of Sutter County are spending half of their income in retail outlets. Since 1994, per capita income in Sutter County has not grown as quickly as average California per capita income. The poverty level in Sutter County is about 16 percent, which is 0.5 percent higher than the California total, based on information from the U.S. Department of Commerce, Bureau of Census (1995 data).

Employment Characteristics

Based on data released in "February 2000 Facts and Figures" published by the Sacramento Area Council of Governments (SACOG), Sutter County had a net gain of 6,026 jobs between 1990 and 1999, a 35.7 percent increase with an annual growth rate of 3.5 percent. The majority of job growth in the county occurred in Yuba City with the addition of 4,839 jobs. The unincorporated area had a net gain of 694 jobs.

California Employment Development Department data for the year 2000 showed that there was an annual average of 4100 farm workers employed in the County. In August 2000 the number of farm workers in the County peaked to 6800, while the low point for the year was 2200.

3.13.2 Impacts

The following criterias help to determine whether the proposed project would result in an adverse or significant impact related to social and economic impacts to the Community. Would the proposed project:

- Physically divide an established community or affect community cohesion?
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

- Reduce the overall housing vacancy rate below two percent or more than five percent of a specific type of unit?
- Impose disproportionately high and adverse impacts on low-income and/or minority populations?
- Remove substantial amounts of taxable property from the property tax base, relative to local fiscal conditions?
- Lose substantial amounts of retail trade, relative to local tax revenues?
- Lose substantial amounts of employment-generating industry, relative to local labor market?

3.13.2.1 Impact Discussion

Methodology

The community impact analysis was based upon information gathered from a variety of sources, including technical studies prepared by Caltrans for this project, such as: the *Draft Relocation Impact Report* (DRIR)*, Project Study Report* (PSR)*,* the *Sutter-Yuba County Economic Report,* the *Caltrans State Route Transportation Concept Report* (TCR)*,* and other internally prepared Environmental and Planning Documents.

Impact to Community Cohesion

Transportation projects affect communities when they act as physical barriers or when they are perceived as psychological barriers by residents. A transportation project that is perceived as a physical or psychological barrier may isolate a portion of a homogeneous neighborhood.

The project area consists of low-density, rural residential and agricultural uses. The majority of residences are located along the existing facility. State Route 99 and its predecessor Highway 87B have separated properties and residents on both sides of the highway since 1933. None of the alternatives would create an additional barrier between established communities. Alternatives 2 and 3 would take traffic flow away from the project area referred to as the Tudor portion of the Highway and the junctions of SR 99/Garden Highway and SR 99/Highway 113. It is not expected that the displacement of any of the structures on the Tudor portion of the highway, or along other segments of the route within the project limits would disrupt the sparsely populated community.

Build Alternatives

Level of Impact:

- No adverse effects on the established community and no effects on community cohesion.
- This impact is considered less than significant under CEQA.

No Build Alternative

Level of Impact:

- No Impacts.

Residential Relocation

The DRIR prepared for this project provides estimates of the number of business and residences by type that would be impacted by the proposed build alternatives. No relocations would be required by the No Build Alternative. All the proposed build alternatives would involve the relocation of some currently occupied residences (Table 3-18).

Table 3-18- Residential Acquisitions by Type and Take

Alternative	SFR*	Mobile Home	Full Take	Partial Take	Poor Quality	Fair Quality	Good Quality	Owner Occupied
1	9	1	2	7	5	1	3	7
2	8	1	1	7	3	2	3	6
3	11	1	2	9	1	2	0	1
No Build	0	0	0	0	0	0	0	0

Source: Caltrans Draft Relocation Impact Report
*Single Family Residence

Alternative 1 would require nine residential displacements, of which only two are anticipated to be full takes (partial takes may not necessitate relocation of the occupants from the impacted property). Alternative 2 would require eight residential displacements, of which only one is anticipated to involve a full take. Alternative 3 would require only 11 residential displacements, of which two are anticipated to be full takes. Sufficient replacement housing exists within the community to

accommodate these displaced residents. The build alternatives would not require the construction of replacement housing.

Property owners would be compensated fair market value for any land and improvements acquired by the State, and relocation assistance would be provided in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. In addition, reasonable access will be maintained during the construction period. All eligible displacees would be entitled to moving expenses. All benefits and services would be provided equitably to all residential and business relocatees with regard to race, color, religion, age, national origins and disability as specified under Title VI of the Civil Rights Act of 1964.

All Build Alternatives

Level of Impact:

- Less than adverse.
- This impact is considered less than significant under CEQA.

No-Build Alternative

Level of Impact:

- No Impacts.

Title VI and Environmental Justice: Relocation Impacts on Minority and Low-Income Populations

Minorities in Census Tract 510 and a series of Census Blocks located in Census Tract 511 along the project limits showed similar percentages of minorities to those found throughout the County (Table 3-16). Proportions of various classified minorities were found in lesser percentages within the project area, than in the State as a whole, with the exception of Asian-Indians, which was 2 percent higher in Census Tract 510 than the statewide amount. This can be attributed to the fact that Census Tract 510 covers an area west of Yuba City, which has a high concentration of Asian-Indians.

Since, 11 residential displacements will occur, there is a possibility that individual members of a minority group(s) may be affected. However, these residences are widely dispersed throughout the project area, which reduces the potential for impacts on these minority group(s).

In addition, the Sper capita income figures for the study area indicate that income levels for residents are higher than the low-income level as defined by Department of Health and Human Services (DHHS). The proposed project is not expected to result in substantial health or environmental impacts on other residents of the study area. Therefore, none of the proposed project alternatives appears likely to have a disproportional high or adverse effect on minority or low income population. Therefore, the proposed project is consistent with the objectives of Executive Order 12898.

All Build Alternatives

Level of Impact:

- No adverse effect on minority and low-income populations.
- This impact is considered less than significant under CEQA.

No-Build Alternative

Level of Impact:

- No Impacts.

Affordable Housing Supply

The proposed project would remove a relatively small quantity of housing from the local housing market. The DRIR indicates that the study area would accommodate replacement housing. According to the DRIR, there is a negligible number, if any, affordable houses impacted by the proposed project.

All Build Alternatives

Level of Impact:

- No adverse effect on affordable housing.
- This impact is considered less than significant under CEQA.

Displacement of Local Businesses

The DRIR indicates that a total of 12 businesses may be impacted by the proposed project. No businesses would be displaced as a result of the No Build Alternative. Alternative 1 would potentially displace seven commercial properties. Alternative 2

and 3 have four and three partial takes of commercial businesses respectively. Businesses affected by the alternatives involve fruit packing, grain storage, truck repair, small office building and a bar. Suitable replacement sites are available for the businesses so they are expected to continue operating effectively. Reasonable access will be maintained for businesses which will not be physically displaced, but will be affected by construction activity.

All Build Alternatives

Level of Impact:

- Less than adverse impact.
- This impact is considered less than significant under CEQA.

No-Build Alternative

Level of Impact:

- No Impacts.

Effects on Tax Revenue

The displacement of the businesses would have minimal effect on local tax revenues. This impact would be temporary due to the fact that only a few businesses being impacted actually generate tax revenues. The businesses, which are directly affected by the project would be compensated in accordance with Caltrans' Relocation Assistance Program.

All Build Alternatives

Level of Impact:

- Less than adverse impact.
- This impact is considered less than significant under CEQA.

No-Build Alternative

Level of Impact:

- No Impacts.

Regional Economic Impacts

State Route 99 is considered an economic lifeline through the agricultural belt of northern central California. It provides a means for the movement of people and goods between metropolitan and rural centers, and connects distant parts of the state to one another.

In terms of the movement of people and goods, traffic congestion along Highway 99 through the project limits creates additional costs in time and efficiency. Given the projections for future increases in traffic congestion in the project area, this portion of Highway 99 is likely to become a more severe source of transportation cost increases for both workers and businesses. By alleviating congestion, all of the proposed build alternatives would decrease these transportation costs.

All Build Alternatives

Level of Impact:

- Beneficial impact

No-Build Alterative

Level of Impact:

- No Impacts.

3.13.3 Mitigation

None Required.

3.14 Visual

3.14.1 Affected Environment

The proposed project is located in a region characterized by flat agricultural lands of the Northern Sacramento Valley. The project does not impact any state or federally designated scenic highway or byway system. The natural landscape is composed primarily of row crops, rice fields and orchards, with limited stands of remnant native

vegetation located along roadsides and adjacent properties. The built environment is composed of scattered farmhouses, out structures such as barns and associated agricultural infrastructure, such as silos and equipment storage facilities. The landscape as a whole exhibits few sensitive visual resources. However, three sensitive resources have been identified that warrant consideration and are described as follows:

Native Vegetation- Stands of remnant native vegetation exist along roadsides and adjacent properties, the most noticeable is the Valley Oak (*Quercus lobata*). The Valley Oak can be categorized as a visual resource as it provides such benefits including roadside buffers and screens, visual landmarks and wildlife habitat. In addition, the towering trees provide regional context as the plant (tree) that once dominated the local Valley landscape.

Feather River- The Feather River, which flows through Segment 2, is an important visual element in the local landscape. Once on the bridge, motorists are able to view the river and its adjacent riparian floodplain. This stands out in contrast to the surrounding agricultural landscape with its symmetrical patterns and sometimes stark appearance. This assessment considers the river and its floodplain as a visual resource with high value.

Sutter Buttes- Although not highly visible from proposed project the Sutter Buttes do represent a unique visual element in the area. This resource provides relief to the otherwise flat landscape and is noticeable as a landmark to motorists.

3.14.2 Impacts

The following criterias are used to evaluate whether the proposed project would result in an adverse and/or a significant impact on visual resources. Would the proposed project:

- Create a substantial adverse effect on a scenic vista?
- Substantially reduce the vividness, intactness, or unity of high-quality views?
- Introduce a substantial source of light and glare into the viewshed?

3.14.2.1 Impact Discussion

Build Alternatives

Flat agricultural lands dominate existing views throughout the length of SR 99. Roadside locations from along this section of the proposed project contain spotty stands of native vegetation, specifically oak trees (*Quercus lobata*). Removal of native vegetation including oak trees may negatively impact visual quality of the route by eliminating elements that provide regional character, visual relief and buffers between the roadway and adjacent properties. No other negative impacts to visual quality or scenic resources are anticipated.

Riparian vegetation located within the floodplain of the Feather River is an important component to the visual and biological resources through this segment. Riparian vegetation provides visual cues that the driver is passing over a body of water, which provides a break from the monotonous agricultural landscape of the region. Removal of this vegetative community may negatively impact visual quality by diminishing variety in landscape types.

Alternative 1 and 2

The Sutter Buttes are a prominent feature on the northern end of the proposed project. Over-crossing design for Alternative 1 (Phase II) and the interchange on Alternative 2 both at the Garden Highway intersection would potentially obstruct views of the Sutter Buttes for some local residents. These new structures should be designed to minimum height requirements to avoid unnecessarily obstructing views to the Sutter Buttes. No other impacts to visual quality or scenic resources are anticipated in these alternatives.

Impacts to the visual character, vividness, intactness, and unity of high-quality views of the proposed project area would be minimized by implementing the following measures:

- It is recommended that existing oaks located in roadside areas be protected from construction operations and retained where possible. The use of "Metal Beam Guardrails' should be used to protect and retain trees which may be located within the new clear recovery zone. If removal of existing oaks is necessary, all trees with a trunk diameter =>6" DBH (Diameter Breast Height) will require mitigation/replacement.

- All disturbed areas associated with construction activities shall be seeded with appropriate perennial native grass species as part of the permanent erosion control BMP requirement.
- Selected locations throughout the length of the project shall be planted with native oaks from acorn or container. These areas shall be identified during the design phase as sites that pose no safety concerns associated with clear recovery for vehicles. Appropriate funding shall be in place for follow-up revegetation activities.
- All efforts should be made to minimize negative impacts to native vegetation when constructing bridge structure in Segment 2. All disturbed areas resulting from bridge construction within the levee boundaries shall be seeded and revegetated to lessen the visual and biological impacts. Erosion control measures shall be utilized in areas that have been cleared and grubbed. Revegetation of disturbed areas in floodplain shall be identified as a follow-up planting project.
- Levees on the west and east ends of the bridge structure impacted by construction activities shall be stabilized using erosion control BMP's during construction. Slopes shall be seeded and revegetated with native plants following construction.
- Considering the flatness of the existing landscape, embankment slopes on over-crossing structures shall be designed 1:3 or flatter to avoid visual inconsistencies with the surrounding terrain. Over-crossings shall be designed to minimum height requirements to avoid unnecessarily obstructing views to the Sutter Buttes. In addition to visual qualities, flatter slopes will assist Caltrans maintenance to control weeds using conventional mowing equipment.
- Newly constructed slopes and loop ramp areas associated with the interchange construction shall be revegetated with containerized and acorn oak plantings. All disturbed areas shall incorporate native grass species into erosion control seeding.
- Minimize impacts to private landscaping and mature trees through the town of Tudor when possible (Alternative 1). Replace or relocate any mature vegetation that is removed for construction in consultation with landowner.
- Avoid removal or impacts to root systems of large oak trees at intersection of O'Banion Road and SR99 Station 130+70 on design plans. Roadway improvements shall minimize construction-related activities within drip zones of trees. Staging and storage areas shall be prohibited from drip zones.

Build Alternatives

Level of Impact:

- Less than adverse.
- This impact is considered less than significant under CEQA.

3.14.3 Mitigation

Not Required.

3.15 Historic and Archaeological Preservation

Federal regulation for cultural resources is governed primarily by Section 106 of the National Historic Preservation Act (NHPA) of 1966 (as amended). Section 106 requires federal agencies to take into account the effects of their actions on historic properties, and provides the Advisory Council on Historic Preservation the opportunity to comment on such actions. For compliance with NEPA, the FHWA follows the Council's implementing procedures contained in 36 Code of Federal Regulations (CFR) Part 800. Historic and archaeological resource studies performed pursuant to these statutes are documented in a Historic Property Survey Report (HPSR) prepared by Caltrans. For compliance with CEQA, the State Historic Preservation Office (SHPO) must provide concurrence with Caltrans findings regarding project impacts.

3.15.1 Affected Environment

Alternative 1, segment 4, passes through Tudor, a small settlement that began as a stop on the Southern Pacific Railroad's "Rideout Extension" (circa 1890) through Sutter County. The town was historically a shipping point for the local agricultural products. Currently, the town of Tudor is a small farming community with a concentration of warehouses, vacant buildings, and some residences along its main road (Highway 99), with outlying farmsteads.

Segment 2 of the proposed project passes near the town of Nicolaus, which was first settled in 1842. Nicolaus is a small, agricultural community with its roots in the production of grains and dairy products. Evidence of its long agricultural history is found in the small cluster of residences and numerous outlying farmsteads remaining in the area.

The Area of Potential Effects (APE) for the proposed project contains 77 improved parcels, all of which were evaluated during this project effort. Caltrans staff has found that one property, the Saunders Ranch located at 833 Tudor Road, was determined eligible for listing in the National Register of Historic Places by formal consensus of the State Historic Preservation Officer (SHPO) on July 24, 1992. SHPO had also previously determined that 26 of the properties are ineligible for listing. Caltrans staff has determined that 24 additional properties appear ineligible for listing (final SHPO concurrence given by SHPO on June 5, 2002). The remaining 26 properties were treated in accordance with the "Caltrans Interim Policy for the Treatment of Buildings Constructed in 1957 or Later," which became effective on June 1, 2001. The Interim Policy allows qualified Caltrans Architectural Historians to dismiss properties from further evaluation if they were constructed in or later than 1957 and have no overriding significance that would make them eligible for listing. Two bridges exist within the APE; however, both were constructed in 1958, were widened in 1999, and have no overriding significance that would make them eligible for listing. Caltrans has evaluated the properties in accordance with Section 15064.5(a)(2)-(3) of the CEQA Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code, and determined that one property with the APE, the Saunders Ranch located at 833 Tudor Road, is an historical resource for the purposes of CEQA.

3.15.2 Impacts

An adverse impact would occur if an important historic property or archaeological resource was removed, damaged or its value diminished. Important historic properties or archaeological resources are those that are eligible for inclusion in the National Register of Historic Places or that meet the following criteria of the State CEQA Guideline:

- Has a recognized significance in California or American history or is of recognized scientific importance;
- Can provide information which is both of demonstrable public interest and useful in addressing scientifically consequential and reasonable archaeological research question;
- Has a special or particular quality such as oldest, best example, largest, or last surviving example of its kind;
- Is at least 100 years old and possesses substantial stratigraphic integrity; or

- Involves important research questions that historical research has shown can be answered only with archaeological methods.

3.15.2.1 Impact Discussion

Important historic properties or archaeological resources are those that are eligible for inclusion on the National Register of Historic Places, or meet certain criteria of the State CEQA Guidelines. Adverse impacts can occur if these resources are removed, damaged or have their value diminished.

The Saunders Ranch, was determined eligible for listing in the National Register under criterion C for its architectural qualities at the local level of significance. This historic property is located within the APE, but will not be impacted by the proposed project. There are no archaeological sites located within the APE.

In the event that buried archaeological materials are encountered during construction, it is Caltrans' policy that work temporarily cease in the area of the find until a qualified archaeologist can evaluate the nature and significance of the materials and consult with the State Historic Preservation Officer (SHPO) about disposition of the materials (*Environmental Handbook*, Vol. 2, Chapter 1). If human remains are discovered or recognized during construction, there shall be no further excavation or disturbance of the site, or any nearby area reasonably suspected to overlie adjacent remains, until the appropriate county coroner has determined that the remains are not subject to provisions of Section 27491 of the Government Code. If the coroner determines the remains to be Native American, he shall contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC will appoint a Most Likely Descendent for disposition of the remains (Health and Safety Code Sect. 7050.5, Public Resources Code Sect. 5097.24).

Build Alternatives

Level of Impact:

- Less than adverse.
- This impact is considered less than significant under CEQA.

3.15.3 Mitigation

None Required.

3.16 Growth Inducement

NEPA and CEQA guidelines require discussion of the potential growth-inducing impacts of a proposed project. Growth inducement in terms of transportation projects can be defined as the relationship between the proposed project and growth within the project area. This relationship is often regarded as either one of facilitating planned growth or inducing unplanned growth (Caltrans, 2000).

3.16.1 Along Proposed Alternatives

With the exception of the proposed interchanges along each of the alternatives, there would be no change to the accessibility of potentially developable land as a result of the proposed alternatives. The zoning designation within this area is General Agriculture (A-G) with a minimum farm parcel size of (8.09 ha) 20 acres, and a minimum homestead size of (0.405 ha) one acre. The Sutter County General Plan has seven goals in place to "preserve the high quality agricultural land for agricultural purposes." The policies are designed to protect the County's agricultural lands and are contained in the Agricultural Lands section of the County's most recent Plan. The Plan notes that "Non agricultural home sites shall be limited to existing parcels and no new residential subdivisions shall be allowed in the agricultural areas." The General Plan, therefore, sets boundaries, which serve as the limit of non-agricultural growth. The General Plan has confined commercial development in the Project Area to agricultural support enterprises.

Since areas along the project limits are protected by strict county zoning policies, construction of the alternatives would not likely result in significant changes to the use of these lands.

3.16.2 Interchanges

Future development at interchanges is often a subject of speculation. Commercial development at or near the proposed interchanges would be limited by current land use patterns, zoning restrictions, and long term commitment of the county to preserve agricultural lands. Physical factors and historic trends make significant change in development patterns unlikely at these points.

3.16.3 Capacity and Growth

Growth inducement applies to the relationship between a proposed transportation project and growth within the project area. The relationship between transportation and growth is usually looked at as either "facilitating planned growth or inducing unplanned growth"(Caltrans, 2000). A transportation improvement which is growth inducing must directly cause economic or population increases greater than what is planned by the local agency without the project. If the improvement is the cause of new development and an influx of residents and economic strength in an area, then it may be growth inducing.

Growth accommodating and growth constraining are two important terms that describe growth. Growth accommodating is designing a system to best handle upcoming growth trends. It is important to forecast future trends and determine what changes are needed to ensure the highways are safe and efficient for the public's needs. Resulting highway improvements are not the cause of development, but a result of development.

Growth constraining effects occur when necessary highway improvements are not made. It is assumed, in some areas, growth will occur regardless of the highway system. More desirable land (cheaper or better), jobs, or planning by local agencies will bring new residents to the area even if there is considerable congestion on the roadways. If the highways do not expand with the influx of new residents and businesses, the growth level will slow down. A project may increase highway capacity, but will only facilitate smoother passage for growth that has occurred and is planned to come.

Also when gauging the "growth inducement" potential the timing and eventual actual construction completion date of a capacity increasing project must be looked at carefully. By the time many capacity increasing projects are completed they serve only to accommodate growth. Further, these projects more often even under serve previously projected growth.

The proposed construction completion date for the proposed project is between November 2006 and November 2008. The interchanges on the proposed Alternatives have not yet been funded or scheduled for possible construction. Interchanges would be constructed at a later date. In lieu of the interchanges, stoplight intersections would be phased in and installed at the SR 99/Garden Highway and SR 99/SR 113 intersections.

According to Sutter County General Plan, the LOS for the project area would decline to level "F" by the year 2015 if no improvements are made (Table 3-19). The Highway Capacity Manual defines LOS "F" as "Forced of breakdown flow, more vehicles are arriving than are leaving." The General Plan has a LOS standard of "D" for the route. According to CT Systems Planning, the segment of Route 99 within the project area currently functions at LOS "E" (indicating "operations at or near capacity; unstable).

Table 3-19 2019 - Traffic Projections

Location and Segment	1998		2015		2025	
	ADT	LOS	ADT	LOS*	ADT	LOS*
Segment 1 KP 14.0/18.5 (PM 8.7/11.5)	10,700	D	19,500	F/B	22,100	F/B
Segment 2 KP 18.5/23.0 (PM 11.5/14.3)	10,700	D	20,200	F/B	22,500	F/B
Segment 3** KP 20.8/31.7 (PM 12.9/17.2) Built in 2000	10,700	D	20,200	F/B	22,500	F/B
Segment 4 KP 27.0/37.2 (PM 16.8/23.1)	13,900	D	20,800	F/B	24,500	F/B

*F/B: Level of Service without/with the project is built.

Traffic congestion within the project area will increase through time. Currently, one section of SR 99 within the project limits is operating at LOS "E" (Table 1-1). The existing highway cannot be expected to maintain this LOS in the future. In fact, the facility is expected to drop to LOS F without improvements.

The Sacramento Area Council of Governments (SACOG) have determined that "the geographical pattern of growth (in the SACOG region which consists of Sacramento, Yolo, South Placer, Yuba and Sutter Counties) will follow the land use patterns already established in the region - strong employment growth in downtown Sacramento, and high concentrations of jobs and residential growth to north, northeast and east of Sacramento" (SACOG 1999).

The SR 99 corridor is identified among these growth corridors. Pressure for residential and suburban development due to regional growth patterns are expected to continue. Sutter County (Table 3-20) has planned for the expected population increases by 2020. It is expected that the area within the city's sphere of influence to the west of central Yuba City where planned development is occurring would absorb the vast majority of this regional pattern of growth for the foreseeable future.

Table 3-20 - Sutter County Build-Out Projections

Area	1995	2015	Population Increase
Yuba City Urban Area (Incorporated)	34,342	57,200	22,858
Yuba City Urban Area (Unincorporated)	22,194	33,617	11,423
Live Oak	5,312	9,110	3,798
Remaining Unincorporated**	13,084	16,073	2,989
Total	74,932	116,000	41,068

*Figures taken from Sutter County's 1996 General Plan

Sutter County has indicated in their planning documents that the protection of agricultural lands is high on their agenda. This has been done through zoning, planned Rural Development Areas, and water, sewage, and drainage requirements. Nicolas is the only Rural Development area in the project area that is projected to have residential population/housing growth (an estimated build out of 19 new homes). According to the County General Plan, the agricultural area to the south of Yuba City is not seen as a solution to future housing needs of the County. Therefore, new and unplanned growth in the farming areas in proximity to the project area are not expected. Industrial-commercial growth is expected to occur in the southern portion of the County in the "commercial reserve" area, but only incrementally per the County General Plan.

The proposed highway and operational improvements would support anticipated and permissible growth within the County. The proposed project is not expected to induce significant levels of unexpected growth. The level of increased capacity which is suggested by the improvements is not expected to have a direct growth inducing effect on the project area. It is possible that the No Build Alternative could cause growth inducement to other areas in the region, which would be a constraint to planned growth in the "greater Project Area."

3.17 Short-Term Uses of the Human Environment and Long-Term Productivity

Construction of the proposed project would result in short-term environmental impacts, which could include:

- Removal of special status plant and wildlife habitat.
- Removal of vegetation.
- Changes in the visual environment.

However, the proposed project would result in increased operating efficiency of SR 99 transportation corridor by:

- Decreasing congestion.
- Improving safety.
- Providing an interregional transportation facility.

This translates into increased long-term productivity of the transportation system on a local level and for the region and state as a whole, with improved movement of goods, services, and people. Preservation of special status species habitat (included in project mitigation) would also contribute to the long-term productivity of the region.

3.18 Irreversible and Irretrievable Commitment of Resources

Implementation of the proposed action involves a commitment of a range of natural, physical, human, and fiscal resources. Land used in the construction of the proposed facility is considered an irreversible commitment during the time period that the land is used for a highway facility. However, if a greater need arises for use of the land or if the highway facility is no longer needed, the land can be converted to another use. At present, there is no reason to believe such a conversion will ever be necessary or desirable.

Considerable amounts of fossil fuels, labor, and highway construction materials such as cement, aggregate, and bituminous material are expended. Additionally, large amounts of labor and natural resources are used in the fabrication and preparation of construction materials. These materials are generally not retrievable. However, they are not in short supply and their use will not have an adverse effect upon continued

availability of these resources. Any construction will also require a substantial one-time expenditure of both state and federal funds, which are not retrievable.

The commitment of these resources is based on the concept that residents in the immediate area, state, and region will benefit by the improved quality of the transportation system. These benefits will consist of improved accessibility and safety, savings in time, and greater availability of quality services. These benefits are anticipated to outweigh the commitment of resources.